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# Studies in Kope 

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René van den Berg, Series Editor

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## Abbreviations

| 1 | first person | IRR | irrealis |
| :---: | :---: | :---: | :---: |
| 1P | first person core | ITER | iterative |
|  | involvement | LOC | locative |
| 2 | second person | MAL | malefactive |
| $2 \mid 3$ | second or third person | MID | middle voice |
| 3 | third person | NEG | negative |
| ABS | absolutive | NOM | nominative |
| ART | article | NR.PST | near past |
| BEN | benefactive | OBJ | object |
| CAUS | causative | OBLG | obligative |
| COMP | completive | PF | perfect, perfective |
| CONJ | conjunction | PL | plural |
| CONT | counterfactual | PROG | progressive |
| DECL | declarative | PRS | present |
| DEI | deictic | PST | past (general) |
| DEM | demonstrative | PURP | purpose |
| DET | determiner | Q | question marker |
| DIST | distributive | RDUP | reduplication |
| D.PST | distant past | REAL | realis |
| DU | dual | REC | recent |
| FOC | focus | REFL | reflexive |
| FUT | future | RSN | reason |
| GOAL | goal | SBJ | subject |
| HAB | habitual | SG | singular |
| IMP | imperative | TRI | trial |
| INC | inceptive | VOC | vocative |
| INST | instrument | Y.N | polar question |
| INT | interrogative | ? | undecided (-i) |
| INTJ | interjection |  | Subscripts: |
| INT.PST | intermediate past | c | causative usage |

declarative usage
m middle voice usage
p person usage
t tense usage

## Editor's preface

This volume contains three distinct contributions to the study of Kope, a northeast Kiwaian language, spoken in the Gulf Province of Papua New Guinea, written by two authors. Hanna Schulz writes about Kope verbal morphology, while Robert Petterson adds to our understanding of Kope narrative discourse and Kope tone, specifically in noun phrases. An introductory chapter by Hanna Schulz sets the scene.

These three studies mean a considerable step forward in the documentation of Kope, which has both a difficult tonal phonology as well as a complicated verbal morphology.

In spite of various efforts, no full consistency has been attained in the glossing and the free translations of example sentences used by the two authors. This not only reflects the complexities of Kope itself, but is also due to the fact that the authors worked on these studies at separate times. Such is the nature of doing field work and publishing on a complex and largely undescribed language. If anything, this study also highlights how much we do not yet know about Kope. But what we know is enough to present in this preliminary format, in the hope that more understanding and knowledge will follow.

I would like to acknowledge the invaluable help of Moss Doerksen in preparing this volume for publication.

The audio recordings on which chapter 12 is based are available at pnglanguages.sil.org/resources/archives/93296.

René van den Berg
Series Editor

# Part I <br> Introduction to Kope 

by Hanna Schulz

## Preliminaries

## Scope of this work

This description of Kope verbal morphology presented in part II of this volume was originally submitted as a dissertation for a Masters in Field Linguistics through the University of Glouchester (UK) in 2018, following three years of on-and-off fieldwork with the Kope people of Gulf Province, Papua New Guinea (Schulz 2018). After three more years of fieldwork, it has been expanded and updated to its current form, including the addition of two introductory chapters in part I. Chapter 1 is a general introduction to the Kope language and its speakers, while chapter 2 deals with word classes. Chapters 4 to 10 (Part II of this volume) offer an initial analysis of the complex Kope verbal system, in which I identify the most common verbal features, as well as various areas requiring further research. Chapter 3 in part I provides a disambiguating analysis of the various functions of $k a$, necessary for the remaining chapters. While the focus of the description is on verbal morphology, there is some clause-level description as well, as the clause type determines which verbal morphemes are obligatory or optional. In describing aspects of mood and modality (chapters 7 and 8 ), it has also been necessary to touch on modal words in verb phrases.

This study is therefore based on six years of intermittent field work, and while this has given significant insights into Kope, I am aware of various gaps in my knowledge, particularly regarding complex clause types, discourse analysis, and the importance of tone.

## Methodology

In 2015, I started work as a translation and literacy advisor to the Kope people. My house is in Ubuo, with Mira Goiravi being a 15-minute walk away (see §1.3 and map 2). The translation committee that I am an advisor to comes from both villages; it includes a man who grew up in Bavi, but has lived in Ubuo for many years. This means that the translation team includes people from both upper and lower Kope, and
people from both sides of the main dialect divide that falls between Ubuo and Mira Goiravi (see §1.4). As well as working on the translation of Luke, the committee has worked with me on collecting and defining words for a dictionary project, translating, writing and editing stories that we turn into literacy materials. They have been part of discussions on how the Kope language works, to assist me in writing this study. They are very enthusiastic about having their language recorded and described.

Since starting my work among the Kope, I have had regular language learning classes with local women. These have taken the form of approximately hour-long sessions several times a week, in which we use recent events, pictures and other materials to elicit words, phrases, paradigms, descriptions and stories. While primarily being about learning Kope for my long-term work in the area, these classes have given me a chance to test ideas and gather data for this study. While most of my classes have been in Ubuo, I also have a weekly language class with the women in Mira Goiravi.

The data used in this study comes from a variety of sources. Notes and recordings from language learning classes have given me a chance to elicit and test paradigms. Stories written by people from across the villages have enabled me to see verbs in their larger narrative context and to use data from across the range of Kope villages. Transcribing recorded stories about recent events has provided a source of natural narrative, as well as enabling me to better understand how tenses are used. Discussions with Kope speakers about when something can or cannot be used have also informed my analysis. Example sentences are referenced if they are from the gospel of Luke, literacy books, or the three texts included in appendix 2 ( $\mathrm{t} 1, \mathrm{t} 2, \mathrm{t} 3$ ). Unreferenced examples come from my personal text corpus, which is not publicly accessible. I have permission from authors, speakers and the translation committee to use these texts and recordings. It can at times be difficult to explain how I am using this data, so the support of a leader in the community who has an MA from the University of Canberra gives me confidence that the permission I have been granted is genuine.

I have drawn on the draft of the translation of the gospel of Luke, as this is a text that has been written and edited by the translation committee, meaning that people from across the dialect divide have approved of how Kope is being used. It also provides a forum in which language is used in complex ways that are difficult to elicit in language class, and that do not occur regularly in the first person narratives that make up the bulk of the text corpus. While I am aware most linguists do not approve
of translated material being used for analysis, I am in agreement with Dryer (2013:2) that such material has its value as a source of difficult expressions, and one that is authored by fluent speakers. I have seen the care and community consultation that has gone into this translation, as well as the extensive oral testing it has undergone for naturalness, and am confident that the committee has produced something that is high quality Kope, with limited influence from the language structures of the source text. Translated material is only one part of the data being used, and is used in conjunction with materials from other sources, to confirm any conclusions being drawn from the translated materials.

Kroeger (2005) has been my foundational text for how I define terms and approach my analysis, with Foley (1986) and Dixon (2010) also contributing significantly to my understanding of terminology, particularly with reference to Papuan languages.

## Analytical challenges

This description started out as an analysis of Kope verbal morphology, but it quickly became apparent that there was a need to define the difference between a morpheme, a clitic, and a word. As the clause type defines the structure of the verb, chapter 3 and §5.7 make clause-level observations, even though morphological description is the goal. Another analytical challenge is that there are two forms, $k a$ and $i$-, both of which have multiple homophones that needed disambiguation and clarification to enable the rest of the analysis to proceed. The multiple meanings of $k a$ are discussed in chapter 3, while the prefix $i$ - is covered in $\S 4.3 .5, \S 5.7$ and in chapter 9 , especially §9.4.

One challenge I have elected not to cover in this paper is the function of the suffix $-i$ on verbs. On nouns and noun phrases, there is a homophonous suffix $-i$ that is a determiner. Brown, Muir, Craig and Anea (2016) gloss $=i$ on verb stems in Urama as a nominaliser. Because its exact function is as yet undetermined, I gloss it throughout this study with '?'. Other items for further research are briefly mentioned in Chapter 10.

Regarding the division of words, local authors are inconsistent in their use of word breaks. Kope verbs can become very long, and so writers put breaks in a variety of places. Although these breaks are not consistent, they still give insight into where the phonological word breaks might be. What people include in the shortest version
of a verb has been used as a primary indicator to help determine what is considered part of the word, even if it is broken off in longer verbs. This is illustrated in (1).

Example (1) demonstrates how the plural subject marker, -umo, is written as part of the verb in combination with the distant past tense, as in (1a). However, it is regularly separated from the verb root in combination with the near past (1b), the present and the future (1c). Because it is written as part of the verb in the distant past, it is analysed as a verbal suffix, not as a separate grammatical word.

In interlinear examples throughout this study, there are usually three lines. A fourth line is occasionally added when the surface form needs to be shown, to demonstrate either orthographic conventions, as in (1), or the outcome of morphophonemic changes. In such cases, the first line keeps to current Kope orthographic practices, while the second line uses morphological breaks that show the underlying form.
(1)
a. Pirodaumo.
pi-r-odau-umo
D.PST-1P-GO-PL.SBJ
'We went (distant past).'
b. Rodau maakaumo.
r-odau-maaka-umo
1P-go-NR.PST-PL.SBJ
'We went (near past).'
c. Odai ra'ai kaumo.
odai r-a’ai-ka-umo
go 1 P-FUT-PRS-PL.SBJ
'We will go.'

In (1c), illustrating future tense, it can be seen that the use of the verbal auxiliary a'ai results in a verb phrase using three words orthographically, although there are only two words grammatically: odai ra'aikaumo.

All the items I have glossed as bound verbal morphemes meet the criteria of being part of a closed class, carrying grammatical and not lexical meaning, being bound, and only occurring on verbs (Kroeger 2005:14). These are formatted using small caps.

## Acknowledgements

The completion of the original dissertation, as well as the publication of its revised version was only possible due to the support and encouragement of many people, some of whom I name here.

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The biggest thank you must go to the Kope people, who have welcomed me, patiently taught and corrected me, been excited to explain their language to me, worked alongside me, and who have made me part of their family. Keito hi' $a$-ka!

# 1. The Kope language and its speakers 

### 1.1 Language name

Kope is a language of Gulf Province, Papua New Guinea, and is listed in the Ethnologue as a dialect of Northeast Kiwai [kiw] (Eberhard, Simons and Fennig 2021). It is at times referred to as Gope or even Gopi, but the people themselves prefer the spelling and pronunciation as Kope.

### 1.2 Classification

Kope is part of the Kiwaian family. The other Kiwaian languages are: Bamu [bcf], Kerewo [kxz], Southern Kiwai [kjd], Morigi [mdb], and Waboda [kmx]. On Map 1 it can be seen how the Kiwaian languages follow the southwestern portion of the PNG coast from Daru Island to the NE Kiwai group. Based on comparative work done by Wurm and Ross, the Kiwaian languages are tentatively classified as a subgroup within the Trans New Guinea family (Evans et al. 2018:705).

### 1.3 Location and population

The Kope people live upstream from the most northerly point of the south coast of Papua New Guinea. They live in the seven villages of Wouobo, Mira Goiravi, Ubuo, Buri, Bavi, Meagoma and Gibi. There are numerous spelling variations for these villages, and Meagoma and Gibi are often together referred to as Karati or Karaulti, which is the name for the United Church mission station, school and health centre located between the two (Map 2). Rotarians Against Malaria (2016) counted 3,096 people in the seven Kope villages in their census. This is less than the projected population of 3,617 Freedman and Hope (2016:3), established by applying the current growth rate of Gulf Province to census data from 2000. Their estimate for the combined NE Kiwai villages was 10,284 . This difference may be due to the Kope people who work and live at Teredau mill not being included in the Rotarian count.


### 1.4 Dialects

NE Kiwai is made up of five groups, who refer to themselves as tribes, which is the word I will also use. These tribes are Anigibi, Kope, Gibaio, Fomomoto (Era) and Urama. Wurm (1977:894) lists Anigibi as a separate language, but as a 2016 survey of ten NE Kiwai villages showed a $90 \%$ or higher apparent cognacy between the Anigibi village (Waitari) and the other villages visited, it is included as part of NE Kiwai (Freedman and Hope 2016:11). While there is high lexical similarity across the five tribes, the survey also reported that "it was clear that each of the five varieties maintain distinct tribal identities."


Map 2. Five tribes that constitute NE Kiwai.
(This map includes several inconsistencies, and can only be used as a general guide.)

Linguistically, these are dialects due to the similarity of word lists and the argument that most of the differences between them can be accounted for by a few orthographic differences. Some of these differences are that Kope has one phoneme for [m] and [v] as well as for $[\mathrm{r}]$ and $[\mathrm{n}]$, whereas the other languages have separate phonemes. Fomomoto uses /s/ where other NE Kiwai languages use /d/. These differences may be minor from a linguistic perspective, but from an educational perspective, they are major differences for children learning to read. Each of the five tribes has their own orthography and are developing their own literacy materials.

The following examples illustrate how three of the five NE Kiwai tribes chose to translate the sentence 'As the sores began to fester, the flies were attracted' for a literacy book produced in 2016. While some of the differences are author choice, comparing words such as 'sore', 'fly' and 'fester' show some of the similarities and differences between these groups. The Kope and Gibaio authors had the most experience at writing in their vernacular. I have added morphemes breaks and a gloss to the Kope example (2).
(1) Umai gema ii'ida u'unei ivo i'iaita.

Anigibi (Titihui 2016:4)
(2) Uma-i pupuo-i eidai i-om-ahoro=ida, hu'uиre-i
sore-DET strong-DET take PST-CAUS-start=LOC fly-DET
i-amairiai=ka.
PST-fester=DECL
'As the sores began to fester, the flies were attracted.'
Kope (Aumarie 2016:4)
(3) Umai geema ii'iida uhunei ivohiaika.

Gibaio (Franklee 2016:4)
As already mentioned, the five tribes that make up NE Kiwai consider themselves to speak different languages. They can understand each other, although there are confusions at times. Intermarriage between the tribes contributes significantly to mutual comprehension as many people have spent time with a family member who speaks another NE Kiwai language. Mixing of the languages is generally disapproved of and met with laughter when it occurs.

There is a dialect and an identity divide between the seven Kope villages, and these divides do not fall along the same line. The people of Wouobo, Mira Goiravi, Ubuo and Buri identify themselves as being the upper Kope, while the people of Bavi, Meagoma and Gibi self-identify as lower Kope. This social division is different to the linguistic division, as there is a minor dialect change between the lower five villages, and Mira Goiravi and Wouobo. This makes Ubuo and Buri socially part of upper Kope, but using the same minor dialect variation as the lower Kope villages.

### 1.5 Language use and bilingualism

Kope is spoken by all generations and is often learnt by people who marry into the tribe. On the EGIDS scale, it ranks as 5 (Developing). While Hiri Motu and English have traditionally been the languages of wider communication, Tok Pisin is increasing in use by those who have spent time in towns, and Hiri Motu is not learnt by many of the younger generations. The school system uses English, which is the official language of education, although few recent grade eight graduates are confident holding a conversation in English, even though they are able to use it in written form in their schooling.

### 1.6 Use of the language in writing

Kope is used in written form in literacy pre-schools and for Bible translation work. While literacy teachers have been trained in all Kope villages, classes are held inconsistently. There is limited written material in Kope, and distribution of these resources beyond the schools has proven to be challenging. While an Organised Phonology Data paper was written in 1991 (Clifton 1991), some elements of the orthography remain fluid, such as word breaks and hyphenation, which is in keeping with the community-driven orthography development being practised in the area (Clifton 1986). An updated phonological description is Petterson (2021). The relationship of the phonemic inventory and the orthography is show in Table 1 below, with the phonemes in the top row and orthographic symbols on the middle and bottom row.

TABLE 1. RELATIONSHIP OF PHONEMIC INVENTORY AND ORTHOGRAPHY


Syllable structure is presented in Table 2. The nucleus of a syllable is either a short vowel, a long vowel or a diphthong.

TABLE 2. SyLLABLE STRUCTURE

| V | aa. 'o | 'to say' | me. $\boldsymbol{a}$ | 'good' |
| :--- | :--- | :--- | :--- | :--- |
| CV | du.bai | 'banana' | o.ra | 'blood' |
| VV | ei.dai | 'to get' | ae.au | 'cockatoo' |
| CVV | dai.ru.a | 'honeybee' | o.dau | 'to go' |

As the translation committee continues to translate the Bible and edit locally produced literacy materials, they are becoming more adept at recognising long vowels and writing them accordingly. They also continue to work through what the best hyphenation and word break practices are for their agglutinating verbs that can become unwieldy when left unbroken. In this paper, the orthographic standard at the time of writing is used, although I recognise that some aspects may change in the future.

### 1.7 Neighbouring languages

Kope shares land borders with the other NE Kiwai languages of Anigibi to the north, Fomomoto to the east, Gibaio to the southeast, and Urama to the south. To the west of the NE Kiwai group is the related Kiwaian language of Kerewo. To the east are Purari (Eleman family) and Ipiko (Anim family), and to the north is Folopa (Teberan family), all of which are likely or possible members of the Trans-New Guinea macrofamily (Pawley and Hammerström 2018). Kope and other NE Kiwai people interact regularly with their Kerewo and Purari neighbours, less frequently with the Ipiko, and rarely with the Folopa.

### 1.8 Previous research

### 1.8.1 Previous linguistic research

There is limited published literature on the languages of the Kiwaian family. Sidney Ray produced a grammar of Southern Kiwai (Ray 1933), and Stephen Wurm has published his observations on the grammar and changes within the Kiwaian family (Wurm 1973, 1977, 1986). Wurm observes that "on the morphological level, the Kiwaian languages are rather complex" (1977:895), an observation all authors have agreed with.

Clifton (1986, 1990, 1991, 1995) has published several short papers on aspects of Kope. He has also been one of the supervisors for the thesis underlying this work, and is working in partnership with the author on the development of a Kope dictionary. While his insights and experience have been greatly appreciated, I have not always agreed with his analysis of morphemes, and I have covered many areas which have not been addressed in his writing.

Clifton has also furthered research into NE Kiwai languages by overseeing Janessa Brown's MA thesis on Urama grammar (2009), and Julia Martin's thesis (2016) on tone in Kope. Martin concluded that tone and vowel length are significant in Kope, and that there are set tone melodies, but that further research is required to establish the relationship of tone, length and stress, and to determine if it is better described as a pitch-accent language.

At the University of Auckland, Jason Brown and his team (2014, 2016a, 2016b) have been working with Urama speakers currently living in Auckland, producing descriptions of Urama grammar, including a focus on the evidential function of $k a$.

They have made a significant contribution to the study of Kiwaian languages, as this is the most extensive grammar produced in more than 80 years, since Ray published his Kiwai grammar in 1933.

In the 1960s, J. Harris of the Australian National University did fieldwork in NE Kiwai, specifically with Urama. In the seventies, Wurm said the work was continuing (Wurm 1973:220, 251). More recently, Petterson (pers. comm.) informed me that Harris had given him a copy of his Urama grammar in 2021, and has since uploaded his data to Paradisec.

Regarding unpublished literature on Kiwaian languages, my situation with SIL in PNG gives me access to people and unpublished manuscripts from across the Kiwaian family.

Phil and Chris Carr have worked with the Bamu people for several decades, and have helped me with discussions of the grammar of Bamu, and how that might inform my analysis of Kope. They also gave me access to a draft of their grammar paper.

Robbie Petterson has worked with all the NE Kiwai tribes in translation and literacy since 2005. His glossed stories provided the basis of Brown's 2009 thesis, and our many conversations have helped inform this paper. While most of Petterson's work is unpublished, he has given me access to it, and ever since I commenced work with the Kope in 2015, we have been discussing the grammar of the language.

While the published material on Kiwaian languages is limited, the experience and knowledge of the linguists I work alongside has significantly influenced the analysis in this paper.

The greatest source of information has been the Kope people themselves, as they have invited me into their community, taught me their language, shared their stories with me, and worked alongside me on the development of literacy materials, translation of the Bible, and the development of a Kope dictionary.

### 1.8.2 Other previous research

To the best of my knowledge, there has been no focussed ethnographic research that has occurred among the NE Kiwai people. The nearest and most recent research was by Dario Di Rosa, who completed his Anthropology PhD among the neighbouring Kerewo people in 2018. In his work, he gives a thorough overview of ethnographic research in the region (Di Rosa 2018:39-50). Robert Maher worked among the Purari languages to the east of the Kope in the 1950s, publishing an ethnography (Maher
1961), and several subsequent papers. Joshua A. Bell has completed more recent research among the Purari langauges (Bell 2006, 2009).

Research I have been unable to access, but that pertains to the art and culture of the region through the practice of carving spirit boards known as gope boards, can be found in Webb (2015).

A study of sago production and associated culture was produced by Rhoads (1980), and is relevant to the Kope, as they too are sago producers and consumers.

### 1.9 Culture

The Kope people live on the rivers of the delta area of Gulf Province (Map 2). These rivers define life for them, as rivers rather than roads connect locations, and tidal flooding is a regular occurrence.

### 1.9.1 Social organisation

Within villages, people tend to live in areas defined by their clans and family lines. Clan affiliation continues to play a significant role in daily life, in both recreational situations such as the teams for sports competitions, or in who is fighting with or against whom in conflicts in the village. Marriage mostly happens between clans, but there are also situations when it is acceptable to marry within a clan. When a clan gets too big, it can separate into two new clans. The definition of 'too big' was traditionally when there were more fighting men than could fit in a war canoe. They would then build a new war canoe, and become two canoes and two clans, each with their own chief.

### 1.9.2 Transport

Transport in the Kope area is almost all done by rivers, with children learning to paddle standing in a dugout canoe from a young age. Canoes are used on a daily basis to go fishing or crabbing, and are a normal part of life. Motors are used on canoes, or on dinghies, for travel further afield when possible. The cost of motors and fuel mean that they are not a common form of transport, even though preferred.

While most transport is river based, there are a few paths between nearby villages, such as Ubuo and Mira Goiravi, but anything longer is done by boat. The nearest airstrip is Teredau, but this closed in 2021. The next nearest is Baimuru, which reopened in 2021 after being closed for several years, but it is only available in
the dry season. Kikori is the nearest open all-weather airstrip. While some commercial flights come to these airstrips, the price is prohibitive for most people. From Kikori it is possible to take a PMV (Public Motor Vehicle) to Mendi, in the Highlands of PNG. It is also possible to take a dinghy to Kerema, the capital of Gulf Province, and from there to take a PMV to Port Moresby. This makes the Kope and their neighbours among the few people in PNG who can access both the Highlands and Port Moresby without using a plane. The boat ride to Kerema goes on the open seas, and each year dinghies and lives are lost when the seas are rough.

### 1.9.3 Diet

Kope people have a diet primarily of sago and seafood. Sago $(d u)$ is the staple starch, and the word $d u$ is also the word for food, as it is part of every meal. Bananas, coconut, and leafy green vegetables are common additions to meals. Due to the regular flooding, maintaining gardens can be difficult, as the flood water is brackish, and saturated ground is not good for plant growth.

Food caught in the rivers includes a variety of fish, crab, shellfish, prawns, and occasionally turtle or crocodile. While pigs or cassowaries may be killed for a special event, they are not a common part of the diet. Other protein sources include grubs, mushrooms, nuts, and small mammals such as cuscus or bandicoot.

### 1.9.4 Geography

In a direct line, the Kope villages are $15-25 \mathrm{~km}$ from the coast of the Gulf of Papua, but the whole area is tidal. The tidal range varies from one to four meters, with the different states of the tide having different names, and being good for different kinds of fishing. The highest tides, or spring tides, occur at the full moon or new moon, and regularly flood whole villages. This regular flooding means that there are few good bridges, as they are regularly damaged by rising water. Kope life is adapted to this cycle of flooding, with buildings being well off the ground, and safe from the water. The village of Wouobo is built on about the only significantly higher ground available, and as such remains safe from floods.

The Kope people live between Kikori, which has an average of $5,772 \mathrm{~mm}$ annual rainfall and no drier season, and Baimuru, with an average of $3,455 \mathrm{~mm}$ annual rainfall and a drier season of Oct-Dec (Rannels and Matatier 2005:70). The drier season in Ubuo village is Oct-April, which means that instead of raining every day, it will only rain a few times a week, and the ground has a chance to dry out. While it
has less rain than Kikori, it is wetter than Baimuru. In the wet season, and after floods, the ground remains saturated, and all paths are very muddy. In some of the Urama villages, where they are closer to the coast, they have built raised walkways to deal with the floods and mud, but I have not seen this in the Kope villages.

There are some rainwater tanks in each village, but they are not common, and people catch water in whatever way they can. When supplies of rainwater run out, people will walk to a bush well to fetch drinking and cooking water, while using wells near their houses for washing water. These wells are not safe for drinking, as flood waters enter them. Between floods, the well levels go up and down with the tide, as the groundwater also responds to the gravitational pull that creates the tide, indicating the high saturation of the ground.

### 1.9.5 Infrastructure

There is very little infrastructure in the Kope area. There are primary schools at Karati, Ubuo and Wouobo, all of which have some staff who are Kope speakers. To attend high school, from grade nine onwards, students go to Kikori. Each year, a few Kope students make it to high school, but very few of them are currently graduating from year twelve. Across the years, Kope people have achieved masters degrees and held significant positions in the PNG government and defence forces. In Port Moresby, the capital city, the Kope community continues to succeed in many such areas. It is unknown how many Kope people are living in the capital city, and how much they maintain their use of the Kope language.

There is a health centre at Karati, and the nearest hospitals are in Kikori or Kapuna. Both are approximately 60 km from Ubuo, but there is a local preference for going to Kikori. Depending which village one is leaving from, and the size of the motor being used, it is $3-5$ hours from the Kope villages to Kikori. The hospital there is run by a mission organisation, Gulf Christian Services, and usually has one or two doctors on staff. While the doctors are usually expatriates, the rest of the staff are Papua New Guinean.

### 1.9.6 Church situation and spiritual practices

The dominant church in the Kope area is the United Church, with the minister for the Karaulti Circuit being based in Karati/Karaulti. This circuit covers the area of the NE Kiwai languages, with most villages having a United Church congregation. Previous
supervisory circuit ministers have been Kope speakers, although a Toaripi speaker was in the role 2018-2020 and a Kerewo speaker started in the role in 2021.

Christians first came to the area in 1901, when the London Missionary Society (LMS) missionaries James Chalmers and Oliver Tompkin, Navagi (a Kiwaian chief of Ipisa village), Jimmy Walker (a mixed-race mission worker), and nine Kiwaian mission students, were killed and eaten at Goaribari Island by the neighbouring Kerewo people (Australia 1904, Di Rosa 2018:96). In the government visits that followed, at least 40 local Kerewo people were killed, 120 war canoes burnt, and the longhouses of the men burnt down. The scale of the response, particularly the shootings on 6 March 1904, resulted into an Australian Royal Commission into the 'affray' at Goaribari Island (Australia 1904).

The story of the death of Chalmers is regularly told by Kope people, some of whom know they are descended from people who fled from Goaribari Island as a result of events. As part of the retelling, it is often emphasised that a 'curse' remains on Gulf Province, due to how they treated the first missionaries, and the lack of reconciliation that has followed. This 'curse' and the resulting 'frustrated modernity' is investigated in Di Rosa's 2018 dissertation.

The next LMS missionary to work in the area was Ben Butcher, who arrived in 1913 and established a mission station at Aird Hills, upstream from Goaribari Island and not far from where Kikori is today, on the land of the Porome people. From here the Gospel was taught to people in the Gulf delta area, including to the Kope people. The churches established by LMS later became the United Church in PNG, which continues to be the dominant denomination in the region, although a number of other smaller more Pentecostal denominations are also present in various villages. The Seventh-day Adventist church (SDA) is the main denomination among the Urama villages.

Traditional spiritual beliefs among the Kope are embedded in place and story. There is belief in the spirits of various plants, animals, locations, and ancestors, and that these spirits have a direct impact on daily life. While most Kope people describe themselves as Christian, awareness of ebihae 'spirits', who can be both good and bad, is still a common part of life. People are often concerned that the spirits of the recently deceased will cause trouble for the living.

Traditional culture was more violent than life today. I was told that children used to be spaced approximately five years apart in age, so that one child was old enough to run from the enemies before the next one was born, as a mother can only carry one
child when fleeing. The word $e$ ' $e$ also demonstrates the violence of life in past times, as it is the word for a person marked for eating. An $e$ 'e is someone who has been captured in war, and will now be eaten and consumed. When I first encountered this word, it was glossed as 'corpse', for although the character in the story was still alive, they were considered as good as dead. That $e$ ' $e$ is now only a character in stories from the past, and that family planning no longer takes fleeing from the enemy into account, are evidence of a change to a more peaceful lifestyle, even though problems with domestic and clan violence still exist.

### 1.9.7 Agriculture and development

Most Kope people are subsistence farmers living off their traditional lands, using largely traditional methods. There is limited cash income available in the Kope area. One logging company has previously worked near Wouobo, and another ran a mill upstream from the Kope, in Teredau. The Teredau mill paused production in early 2020, and while there are rumours of its reopening, it is currently closed. While this mill is on Anigibi land, most of the employees were Kope, and this was the main source of cash income to the Kope people. There are a few small 'walkabout' mills being operated locally, which are also a source of income.

When operational, Teredau was the nearest opportunity to sell things at market, with the next place being Kikori. In 2019, some businessmen from Port Moresby started coming to the region to purchase live crabs and fish bladders for Chinese medicine, for re-sale in Port Moresby and beyond. This has resulted in an increase in cash in the area

There are plans for an oil palm development, but legal problems have caused delays. An oil and gas company has the research and mining rights to the area, and it is expected that in the coming years, they will establish a base and begin to export liquid natural gas (LNG) from the area. This should provide employment and royalties to people in the area.

## 2. Word classes

Kope has three open word classes (nouns, verbs and adjectives) and various closed word classes (pronouns, demonstratives, adjectives, quantifiers, numerals, adverbs, postpositions, conjunctions, interjections and particles). This chapter briefly describes and illustrates each of these word classes, and ends with short sections on noun phrases and clause structure.

### 2.1 Nouns

Nouns in Kope can be defined using the test question 'Ara NOUN=ra?' 'Is this a NOUN?', the answer to which is ' $\mathrm{N}=k a$.' 'This is a NOUN.' While verbs can occur in the answer format, they cannot occur in the questions format, but have their own inflection for questions, as is shown in (1)-(2) below. See $\S 7.3$ for a full description of the verbal morphology of questions.
(1) Ara duba-i=ra?

> Duba-i=ka.
this banana-DET=Q
'Is this a banana?'
'It is a banana.'
(2) Ruu $a$-m-odau?

Odau=ka.
3.SG Y/N-IRR-go
'Is he going?'
go-DECL
'He is going.'

Other identifying features of Kope nouns are that they can be marked with the nominative - $r$, for number, location, instrumentality, destination or origin. The suffix $-i$ is a form of determiner often found on nouns, but it has not been fully analysed. Kope nouns do not have class or gender distinctions.

Kope does distinguish count nouns and mass nouns. Count nouns can be quantified by numbers or hiiro 'many', whereas mass nouns can be quantified by geema or geega 'great, big'. While geema or geega can be applied to a count noun in an adjectival manner, when used for multiple count nouns, reduplication occurs, so
that geema'eema or geega'eega means 'many great ones'. In contrast, hiiro 'many' cannot be used with a mass noun.

Kope compounds nouns, or nouns with verbs, to create new and more descriptive nouns such as meree-behe 'person-girl, daughter' or iapui meree 'appointed person, messiah'. As people often recognise the parts of the compound, they may write them as two words to reflect their origin, or as one word to reflect current speech practices. Compound nouns are regularly used in translation to describe a category of people that is not part of the traditional Kope vocabulary, such as Iehoma poue ema'atidio uubi [God offering giving people] 'people giving gifts to God' or 'priests'.

There are a few ways to express plural number in Kope. Some words have specific words for the plural like meree 'person' and uubi 'people', while others take the suffix -oi or -bai'oi to change a single into a plural, including maamu 'mother' and maami'-oi 'mothers', memiho 'bad' and memiho-boi'o 'bad ones'. Other words do not change between plural and singular, or can use reduplication when the individual nature of each of the plural items needs to be expressed, such as go'otogo'otoi 'each village'. Verb morphology will indicate if both the subject and object of the verb are single or plural (4.3).

Descriptions of time, manner, place and direction in Kope are often achieved using a noun with a postpostion, rather than with a true adverb. For example $i i^{\prime} i$ is not 'behind' but 'back', while ho' $u$ is 'top', rather than 'above', as shown in phrases such as ii' 'ii-da 'at the back/located behind' and ho'u-ito 'to the top'. The same is true for goro 'under', hoho 'face, front', taitai 'near, alongside' and kekai 'close'.

### 2.2 Pronouns

Kope pronouns are shown in table 3. They distinguish first, second and third person, and single, dual, trial and plural number. While other Kiwaian languages have a paucal rather than a trial pronoun, testing in Kope indicates that the trial refers to exactly three people. The dual and trial are formed by the addition of the dual suffix $-t i$ or the trial suffix $-b i$ to the plural pronoun.

The dual pronouns are commonly used, but the trial pronoun is less commonly used, with speakers defaulting to the plural. This is further discussed in 4.3.

Kope pronouns are used to mark possession, and do not distinguish alienable and inalienable possession. They also do not mark gender or clusivity. Ruu motoi 'His/her
house' and ruu otoi 'his/her leg' are the same pronoun as ruu odai-ka 'He/she is going'.

Table 3. Kope pronouns

|  | single | dual | trial | plural |
| :--- | :--- | :--- | :--- | :--- |
| first | moo | rimoiti | rimoibi | rimo |
| second | roo | ri'oiti | ri'oibi | ri'o |
| third | ruu | riiti | riibi | rii |

### 2.3 Verbs

Kope verbs are the subject of chapters 5 to 10 , where they are described in detail. Verbal morphology carries a significant functional load in Kope. Verbs are marked for person and number of the subject, as well as the number of the object (chapter 4). An unusual feature of person marking is that the core involvement of the first person is marked (§4.2.1). Kope verbal morphology distinguishes four past tenses, present and future tense (chapter 5), as well as marking aspect, including continuative, punctiliar, progressive, habitual, iterative, distributive, perfect and inceptive (chapter 6). Declarative, imperative and interrogative moods are marked (chapter 7). Also marked with verbal morphemes are modalities of obligation, purpose and irrealis (§8.1-§8.3). Dubative, abilative, desiderative and counterfactual modalities are marked with separate words, not with verbal morhology ( $\S 8.4-\S 8.7$ ). Valency changing morphemes mark causative, beneficiary and middle voice (chapter 9).

Kope does not have switch reference, clause chaining, or medial verbs. An interesting feature of Kope verbs that is not further explored in this volume are verbs of motion. Verbs of motion are centred on the person or on the landscape, with directions commonly marked as being to or from the river bank, or with or against the tide.

### 2.4 Adjectives

Kope adjectives are nominal in character, and with further research may be classified as a sub-class of nouns. Their nominal character is shown in that they can take postpositions such as -ro 'NOM', $=d a$ 'LOC, INSTR' or rautu 'with', as in examples (4)(5), where the resulting PPs function as manner adverbs.
(4) Ka Iesu-ro iha mea-i-da i-m-oadu'o-i

CONJ Jesus-NOM truly good-DET-INST PLREC-REC-tell-?
'And Jesus started to tell them really well (lit. truly with goodness...')
(Luke 24:27)
(5) uubi-ro ge'ii rautu p-o'opai-mo people-NOM happy with D.PST-welcome-PL.SBJ
'People welcomed him with happiness' (Luke 8:40)

Adjectives in Kope express property concepts such as geema $\sim$ geega 'big', keehi 'small', pupuo 'strong', ge 'ii 'happy' and memiho 'bad'. They often function in a predicative manner, where they are uninflected, and can take the declarative $=k a$ and the interrogative $-r a$.

| (6) Roo bogobogo-ra? |  |
| :--- | :--- |
| 2SG white-Q | Moo bogobogo=ka. |
|  | 'Are you white? white= $?$ |

Adjectives can be modified by an adverb of degree such as hi'a 'very' as in geema hi'a ge'ii [big very happy] 'very great happiness' or ge'ii hi'a=ka [happy very=DECL] 'very happy'.

Kope has a limited number of colour adjectives, with colour descriptions being based on the 'skin' of something, or on a related object. Aromo tamai 'sky skin' is used for blue. Boroio 'pale yellow/green' is also the name of a plant in the turmeric family, and darudaru 'yellow' is from daru 'a yellow clay under the mud layer'.

Reduplication of nouns can also be used to form other adjectives, such as hepu 'ground' becoming heри-hери 'muddy', and made 'word, talk' becoming made-made 'talkative'.

### 2.5 Demonstratives

Kope demonstratives are shown in Table 4. Demonstratives distinguish five parameters for distance and visibility, as well as three syntactic categories: nominal, locative (adverbial) and manner (adverbial). The various options within each column are variants due to minor dialect variations, although further research may uncover other reasons for the variation.

The nominal demonstratives always introduce a noun phrase. The two types of adverbial demonstratives can function as an adverbial phrase on their own.

Table 4. Kope demonstratives

|  | proximal-1 <br> (right here) | proximal-2 <br> (close <br> enough to <br> touch) | medial <br> (within <br> sight) | distal <br> (within <br> sight, but <br> further) | invisible |
| :--- | :--- | :--- | :--- | :--- | :--- |
| nominal | ara | ara | aa'o | aire <br> aure | au'o |
| locative | ararie <br> rarie | ara-hioi <br> hioi <br> hiou <br> ahiou <br> ahiou'ou <br> ahie'ei | ara-hiei <br> hiei <br> hieu | au'oirie <br> ireirie (?) | au'o <br> hie'ei |
| manner | araibai, araibau, aibai, <br> aibau | ibai |  |  |  |

### 2.6 Quantifiers

Kope has a limited set of quantifiers. Count nouns are quantified by means of hiiro 'many' or amii'a 'some'. 'Few' is expressed as reto'a-ti, which is 'two-DU' and can be used for two to four objects. The dual suffix $-t i \sim-o t i$ can be added to any noun to express two specimens of the referent: pee-ti, 'two canoes'.

Mass nouns are quantified by kehi 'a small amount' or geema ~ geega 'a large amount'. Turiaha is 'all, each, every' and can be used with both count and mass nouns, as can tiato 'none, nothing'.

### 2.7 Numerals

Kope has a base-two counting system, as shown in Table 5, and no separate word for 'three', even though the language has a trial marking system on verbs and pronouns. While it is possible to form Kope numbers beyond two, number words are regularly
borrowed from English for numbers greater than two, starting from tiri 'three', poa 'four', and paipi 'five'.

Table 5. Kope numerals

| Number | Kope | gloss |
| :--- | :--- | :--- |
| 1 | gaa'u, gaa'ubuo | 'one' |
| 2 | reto'a | 'two' |
| 3 | reto'a-gaa'u | 'two-one' |
| 4 | reto'a-reto'a | 'two-two' |
| 5 | tu-hapuo | 'hand-side' |
| 6 | tu-hapuo-gaa'ubuo | 'hand-side-one' |
| 7 | tu-hapuo-reto'a | 'hand-side-two' |
| 8 | tu-hapuo-reto 'a-gaa'u | 'hand-side-two-one' |
| 9 | tu-hapu'o-reto'a-reto'a | 'hand-side-two-two' |
| 10 | tu-oti | 'hand-DU' |
| 11 | tu-oti-gaa'ubuo | 'hand-DU-one |
| 15 | tu-oti-tu-hapuo | 'hand-DU-hand-side' |
| 20 | tu-oti-oto-oti | 'hand-DU-feet-DU' |

### 2.8 Adverbs

Modifications for time, manner, place and direction in Kope can be achieved by a limited set of adverbial words, including manner and locative demonstratives (see $\S 2.5$ ), as well as by verbal morphology. Many adverbial functions are achieved by the use of postpositions on noun and adjectives (see §2.9). As a result, Kope has few adverbs: some temporal adverbs, two focussing adverbs and a negator.

Temporal adverbs include tehata 'before yesterday', tetu 'yesterday', do'o 'now, today', toutu 'tomorrow', and toutua 'after tomorrow'. Beha 'only' is a focus adverb, as is haato 'only'. Further research is required to determine the environments that separate these two words. The negator bia 'not' can also be classified as an adverb.

Verbal morphology also encodes information about time, and verbal roots can contain information about direction. While the near past and distant past can be modified both with a temporal adverb such as tetu 'yesterday' or tehata 'before yesterday' (in addition to verbal morphology), the immediate past does not have such a specific adverb. The immediate past is only encoded in the verbal morphology, as described in §5.4.

### 2.9 Postpositions

Kope has both postpostional words and postpositional clitics. Postpositonal words include rautu 'with' and eito 'to, towards'. Postpositional clitics include the following four. The analysis presented here is tentative and incomplete.

- $\quad=i d a$ ( and variant $=d a$ ) which attached to a noun refers to a location in space, such as Ubuo=ida 'at Ubuo', but on a verb refers to a location in time: odai=ida 'when s /he goes'. It can also mark an instrument: $t u=i d a$ 'with his/her hand'.
- =ido marks a goal or beneficiary: moo=ido 'to me' or 'for me'.
- =ito is direction towards: moto $=$ ito 'to the house'; it is likely to be related to the word eito that has a similar meaning.
- =ato is location or direction away 'at, from': Goirami=ato 'at Goirami'.


### 2.10 Conjunctions

Kope has conjunctions that operate at a clause level, and others that operate at a phrase level. Clause level conjunctions can be used as the initial word in Kope clauses, whereas phrase level conjunctions function as suffixes.

Conjunctions found in Kope are $k a$ 'and, then', mia 'also', ida 'then, so that, suddenly' and mabu 'because'. Some of these can be combined, to form kaida 'and then, and so that' and kamia 'and also'. A full discourse analysis has not been completed, but the initial analysis is that $k a$ 'and, then' continues the story whereas ida 'then' introduces a new and possibly unexpected element to the narrative. Mia mostly occurs within kamia and gives further information on something that has already been introduced. See also chapter 11 (in part III of this volume) on Kope discourse.

The conjunction -ra coordinates items within a phrase, whereas -re coordinates the conjunction of phrases. These can be combined, as is seen in example (7).
 ematomudio meree ii'i modobo-ka.
learning person grow able-DECL
'If another person would come to me, then he would think to become by learning person (disciple), his/her father and mother, and wife and children, and older brothers and older sisters, and also his/her very own life, s/he must put them to the side. And $\mathrm{s} / \mathrm{he}$ will be able to become my learning person.' (Lk 14:26)

### 2.11 Interjections

Interjections are used to express consent (i.e. 'yes') or dissent (a'a or o'o 'no'). An emphatic $h a$ is sometimes found after a question. The interjection kaire expresses encouragement and affirmation of what someone has said or is doing. Pigs are called and directed by means of ma ma ma.

### 2.12 Particles

Kope has a number of common particles, most of which have not been clearly defined. Those that have been glossed as 'FOCUS' through this paper are ai-, ha-, and $-h a$. They are listed in chapter 10 as needing further research. When the two prefixes are combined into aiha, the resulting meaning is 'therefore'.

The clitic $=k a$ is largely declarative in function and is discussed in detail in chapter 3.

A politeness particle is $-o$; it is used in direct address as a suffix on the name or title of the person being addressed.

### 2.13 Noun phrases

The head of a Kope noun phrase is usually the final word of the phrase. Modifying elements typically precede this head noun.

Pronouns precede the noun and have a possessive meaning: rimo pee [ 1 pl canoe] 'our canoe' and ruu oobo [3sg woman] 'his wife'. Demonstratives also precede the noun: ara raa 'this thing' or 'this fish' and au'oi re'ei 'that far place'. Similarly, adjectives the noun: mea oobo 'good woman', as do numerals and other quantifiers: reto'a meree-ti [two person-DU] 'two people' and hiiro uubi 'many people'.

Relative clauses have not been studied in depth. Initial research indicates that they occur both before and after the nominal phrase.

Kope noun phrases are rarely longer than three words. There is a preference for ideas to be stated in a series of shorter phrases, rather than combining ideas into a single longer phrase. This can be seen in example (8), where the speaker says 'at the river-mouth rest house... in front of the rest house' rather than 'in front of the rivermouth rest house'.
(8) Humo-i pariki re'ei i-de'a-i=ka, pariki
river.mouth-DET rest.house place PL.OBJ-put-?=DECL rest.house
hooho-i hiei=da, raa~ra-i i-roru'u-du-uто
face-DET there=LOC thing $\sim$ RDUP-DET PL.OBJ-connect-INT.PST-PL.SBJ
kaire.
okay
'They put the speakers at the river-mouth rest house, in front of the rest house, they connected the speakers.'

Determining the borders between these phrases can be challenging, unless the determiner $-i$ is used, as it only occurs at the end of a phrase. This can be seen in example (9) below where the phrases ao-ra aio-ra-i 'mother and father' and moo mabia-i 'my older sister' come together as the subject of the verb which is rimo himia 'we ourselves'.

| ...himio-i=dal | ao-ra | aio-ra-i-re | moo |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\ldots$..day=LOC | father-CONJ mother-CONJ-DET-CONJ | 1SG |  |  |  |
| mabia-i | rautu | rimo | himia | $\ldots$ | pi-r-odau-mo |
| older.sister-DET | with | 1PL | REFL |  | D.PST-1P-go-PL.SBJ |

'.. on that day, mum and dad, with my elder sister and me, we took ourselves...' (t2:2)

Exceptions to the noun being phrase final can be found when something is being emphasised such as the size of the pig in boomo geega omiodiikaumo [pig big they.are.bringing,back] 'they are bringing back a big pig' (from t2:31).

### 2.14 Clause structure

Kope clauses usually have SOV constituent order, as in (10).
(10) Umu-i-ro kokoro-i i-bodi-dio
dog-DET-NOM hen-DET PL.OBJ-follow-CONT
'The dog is chasing the hens.'
However, clauses can only consist of a single verb, as in (11), since the information about the subject and the object is encoded in the verbal morphology.
(11) Obodi-dio-ka-umo.
follow-CONT-PRES-PL.SBJ
'They are chasing it.'
It is also possible to form a stative clause that has no verb, but uses the declarative $=k a$ :
(12) Ru'a tutu=ka.
tree tall=DECL
'The tree is tall'

## 3. Disambiguating ka

The phonological form $k a$ has at least three distinct functions in Kope. At the beginning of a clause, it is a conjunction $k a$; at the end of a clause, it is a clitic $=k a$, and it also occurs as a verbal suffix - $k a$. Distinguishing these three functions from each other is critical to analysing each one accurately. The following discussion first distinguishes the three forms of $k a$, then looks at the role the clitic plays in determining clause type, which then determines verbal morpheme use.

The clauses formed by $=k a$ use reduced verbal morphology, but are not medial verbs; instead I refer to them as secondary clauses. This is demonstrated in §3.3.4.

The clitic $=k a$ is unique to the NE Kiwaiain part of the Kiwaian language family (Wurm 1973:251, based on information from J. Harris).

### 3.1 Distinguishing $k a,-k a$ and $=k a$

### 3.1.1 Conjunction $\boldsymbol{k} \boldsymbol{a}$

The first distinct function of $k a$ is the conjunction 'and, then', the easiest of the three functions to distinguish. The three ways of distinguishing this function of $k a$ are through its clause-initial position as a separate word, through patterns of speech and writing, and through the fact that it can occur directly after the clause final clitic $=k a$.

The conjunction $k a$ occurs clause initially, as in (1). In spoken Kope, $=k a$ and $-k a$ are both said quickly as part of the verb phrase, whereas the conjunction can come after a pause.
(1) Ka rimo tumu omo-i, Pemoo, aiha pi-r-odoro-umo CONJ 1PL creek creek-DET Pemoo therefore D.PST-1P-enter-PL.SBJ odi hi'a-i. end very-det
'We paddled to the very end of the bush creek, Pemoo...' (t2:7)

That $=k a$ and $k a$ can occur consecutively is further evidence that they are separate particles.
(2) ...ka rii i-omohu'oi=ka, rimo r-odau-du-umo CONJ 3PL PST-go.down=DECL 1PL 1P-go-INT.PST-PL.SBJ
emi'ei-tuti=ka, $\boldsymbol{k} \boldsymbol{a}$ program rii-ro om-ahoroi=ka. sit-DIST=DECL CONJ program 3PL-NOM CAUS-start=DECL
'...then they went down, and we each sat down, and they started the program.' ( $\mathrm{t} 3: 31$ )

### 3.1.2 Clitic $=k a$ and suffix $-k a$

My separation of the clitic $=k a$ and suffix $-k a$ is a break from the analysis used in the other literature on NE Kiwai languages, where the declarative $=k a$ and the tense marking - $k a$ are not separated. Brown (2009:71) only has one example of -ka, as part of -kaumo in the texts studied, so does not address the issue. Craig (2014:25-26, 6970) and Brown et al. (2016:30-31) all include $-k a$ as present tense, or non-past tense, in their paradigms, without distinguishing it from the $=k a$ which occurs at a clausal level. It is my analysis that there are two homophonous morphemes $k a$, one a clitic, and the other a suffix.

The inflectional suffix - $k a$ is an obligatory part of the dual, trial and plural subject marking on the verb in the near past, present and future tense, and is part of the complete primary verb morphology paradigm. In contrast to this, $=k a$ clauses, which I refer to as secondary clauses (see §3.3.4 for detail), have a reduced verbal morphology, usually not indicating the subject number, or first person involvement, or a specific past tense. The fact that some morphemes, including - $k a$, are obligatory in main clauses, but optional in secondary clauses involving $=k a$, suggests that they are two different.

In example (3), the verb rima'aikaumo 'you-PL are giving us things' has full verb morphology, including the inflectional suffix $-k a$.
(3) $M e a-h a=k a$ rimo iraromo r-i-ma'ai-ka-umo.
good-FOC=DECL 1PL thought 1P-PL.BEN-give-PRS-PL.SBJ
'You are giving us good things to think about.' ( $\mathrm{t} 3: 58$ )
Example (4) is a sentence with a dual subject, rii-ti, but this dual subject is not marked on the verb due to it being a secondary clause.
(4) Ore-i rii-ti aramи maamu-i eito ema'ai=ka. grub-DET 3PL-DU grandmother-DET GOAL give=DECL
'They (two) gave the grubs to their grandmother.'
In a main clause, the tense marker - $k a$ follows the verb root and any aspect markers, and precedes the subject markers. In a secondary clause, the clitic $=k a$ usually occurs in place of the tense and subject markers, and on the occasions where a subject marker is used, $=k a$ follows it, rather than preceding it.

Examples (3)-(6) demonstrate this shift. In (4), ema'ai=ka 'they-2 gave them,' the verb is not inflected for tense or number, but in a main clause in the past tense, ema'ai=ka would be pema'aido (5), where the tense marking requires $p$ - but not $-k a$. If it was present tense main clause, it would be ema'aikaido (6), requiring -ka before the subject marking -ido.
(5) Distant past

P-ema'ai-do.
D.PST-give-DU
'They (two) gave it (to her).'
(6) Present

Ema'ai-ka-ido.
give-PRS-DU
'They (two) give it (to her).'
These examples demonstrate the contrast of $-k a$ and $=k a$ in different clause types and tenses, and that their different behaviour in these settings can be explained by ka having two different functions.

In example (7), the reduced morphology of $=k a$ clauses is evident, as rimo 'we, us' is the first person plural, but odai=ka 'we went' is marked neither for first person core involvement (see $\S 4.2 .1$ ), nor for the plural subject.
(7) Rimo odai=ka, Mia'ogoma-i go'oto=ida Iraua.

3PL go=DECL Meagoma-DET village=LOC Iraua
'We went from the village of Meagoma to Inaua.' ( $\mathrm{t} 1: 6$ )
Examples (8)-(10) demonstrate the contrast with how the clause 'we went' would be inflected if it was a main clause rather than a secondary clause. Note that in (8)-(10),
the first person core involvement is obligatory, and that $-k a$ is only required in some tenses, but that the subject marker -umo comes after both the $-k a$ and $-d u$ tense markers
(8) pi-r-odau-umo
D.PST-1P-go-PL.SBJ
'we went' (distant past)
(9) r-odau-du-umo

1P-go-INT.PST-PL.SBJ
'we went' (intermediate past)
(10) r-odau-maaka-umo

1P-go-NR.PST-PL.SBJ
'we went' (near past)
The morpheme - $d u$ is both the intermediate past marker (9), and an irrealis marker for intermediate past, present and future tenses (11).
(11)
A-m-odau-du-umo?
Y.N-2|3.IRR-go-IRR-PL.SBJ
'Are they going?'

In the near past, $-k a$ is both an irrealis marker and a tense marker (12). This can be seen in examples (11)-(12) and in Table 6 in $\S 3.2$ below. As these morphemes all occur in the same position, they are all variations on the $-k a$ morpheme. An alternative analysis would be to include the inflectional suffix - $k a$ as part of the portmanteau -kaumo, but as -umo is consistently used as the plural subject marker in all tenses, I have consistently analysed this as a distinct suffix, leaving the $-k a$ requiring a separate analysis.
(12) $A$-m-odau-ka?
Y.N-2|3.IRR-go-NR.PST.IRR
'Did he go (this morning)?'

## Odau-maaka.

go-NR.PST
'He went (this morning).'

There is further evidence that there are two functions of $k a$, each occurring in a different place in a verbal clause. Although the reduced morphology in secondary clauses means that the plural subject -(u)mo marker usually does not occur, as in (7), (15), when it does occur, it precedes $=k a$, as in Error: Reference source not found. In
a main clause, the plural subject marker follows $-k a$, as in (10) and (14). In a secondary clause, $=k a$ comes after the plural subject marker, if it is used.
(13) $H i e i=d a$ rimo welcome a'ai-mo-i=ka.
there $=$ LOC 1 PL welcome do-PL.SBJ-? $=$ DECL
'They welcomed us there.' (t3:3)
(14) Uubi ge'ii a'ai-ka-umo.
people happy do-PRS-PL.SBJ
'People are celebrating.' (Lit. 'People are doing happiness.')
(15) Rii ge'ii a'ai=ka.

3PL happy do=DECL
'They celebrated / They are celebrating.'
Thirdly, while declarative $=k a$ remains consistent across all time frames, $-k a$ is restricted to specific tenses, occurring in the near past, present and future tense, but not intermediate or distant past. As $=k a$ occurs in secondary clauses in all these time frames, it further demonstrates that they are not the same particle. Brown et al. (2016:30) say that in Urama " $k a$ marks utterances as declarative, but also marks the tense as present, or as having some reference to the time of utterance (so can often be interpreted as present perfect)."

In (16), the clitic =ka and the future oo 'ui a'ai kaumo 'they will come' are used in the same sentence, with the second fully inflected for future tense.
(16) Rimo, ruru gaa'u oabui r-a'ai=ka..., ka omoabai uubi 1PL envelope one take.across 1P-FUT=DECL CONJ help people oo'u-i a'ai-ka-uто...
come-? FUT-PRS-PL.SBJ
'We will take out one envelope and take it across..., the helping people will come...' (t3:34-45)

Example (17) shows the contrast of intermediate past and $=k a$ in the one sentence, and example (18) does likewise for the distant past.
(17) ...rimo $i$-odoi $=\boldsymbol{k} \boldsymbol{a}$, gido $\sim$ gido om-ahoro- $\boldsymbol{i}=\boldsymbol{k} \boldsymbol{a}$, gido $\sim$ gido

1PL PST-go.down=DECL song $\sim$ RDUP CAUS-start-?=DECL song $\sim$ RDUP $i$-r-a'ai-du-umo, or-opoi'o-i. PL.MID-MID-do-INT.PST-PL.SBJ MID-end-?
'...we walked down, and the singing started; we were singing until it finished.' (t3:17)
(18) Ruи i-or-oadu'-uti=da dumo kopi aiha p-oobodi, 3SG PST-MID-talk-ITER=LOC cloud ball therefore D.PST-appear duи'i-ro $\quad i$-atimai=ka. darkness-NOM PST-cover=DECL
'When he was talking, a ball of cloud appeared, and darkness covered them.' (Lk 9:34)

Note that in example (18) the same $i$ - for past tense is used on the dependent clause with $=d a$ 'LOC,' as in the secondary clause with $=k a$. This will be discussed in §5.7.

An area needing further research is if the declarative clitic $=k a$ is actually $=i k a$. There is a verbal suffix $-i$ which may be occurring between the root and the clitic, or the $-i$ may be part of the $=k a$ as $=i k a$. Complicating the analysis is that some verb roots end in $i$. While the majority of $=k a$ clauses could be analysed as $=i k a$, there are enough exceptions that this paper is leaving the analysis as $-i=k a$ until further research can determine the role of $-i$ in these contexts.

Example (19) was written by an author who at the time had limited writing experience in Kope, and it is possible that an $-i$ would be added by an experienced author.
(19) Ka huru-i damara-i=da oo'a=ka.

CONJ river.mouth-DET salt.water-DET=LOC be=DECL
'And it is where the river meets the sea.' $(\mathrm{t} 1: 21)$
In example (20), which is transcribed from a recording, it was clear that there was no $-i$ between emidio and $=k a$.
(20) Meree kee~ke turiaha ru'a-i ipi ho'u=ida emidio=ka. child small $\sim$ RDUP all tree-DET piece top=LOC remain=DECL
'All the children are sitting/remaining on top of the log (lit. tree piece).'

The phrasing of questions also separates $=k a$ from $-k a$. At a clausal level, declarative $=k a$ is replaced with interrogative $=r a$. In a main verbal clause, the question is formed using prefixes, while $-k a$ has a complex relationship with tense and questions; see $\S 3.2$ and Table 6 below for a description.
(21) Rii moto=ida=ra? Rii moto=ida=ka.

3 PL house $=$ LOC $=\mathrm{Q}$ 3PL house $=\mathrm{LOC}=\mathrm{DECL}$
'Are they at the house? They are at the house.'
(22) Rii a-m-emidio-du-umo? Rii emidio-ka-umo.

3PL Y.N-2|3.IRR-remain-IRR-PL.SBJ 3PL remain-PRS-PL.SBJ
'Are they staying? They are staying.'
The analysis of two homophonic particles, $-k a$ and $=k a$, can be questioned when looking at data from Anigibi, one tribe upstream from Kope in the NE Kiwai family, where they use $t a$ in the places that Kope uses $-k a$ and $=k a$. This is illustrated in (23)(24), including the combined form with the plural subject marker -taumo in (25). The Kope phoneme $k$ does not consistently correspond to Anigibi $t$, and hence the fact that Anigibi also uses a single form for what has been described as homophony for Kope, raises questions that further research could answer.
a. Anigibi:

Iee, ia'a=ta noo bee'a=ta pupиo meree-i bu'ii=da.
Yes true=DECL 2 SG only=DECL strong person-DET bush=LOC
'Yes, you are the strongest animal (lit. person) in the bush.' (Koumu 2017:5)
b. Kope:

Iee, iaha=ka roo beha=ka pupuo meree-i bu'i=da. Yes true=DECL 2 SG only=DECL strong person-DET bush=LOC
'Yes, you are the strongest animal (lit. person) in the bush.' (Aipua 2017:5)
(24) a. Anigibi:

Uma-i memi'o kamea gema ii'i=ta.
sore-DET bad CONJ great grow=DEC
'The sore grew worse.' (Titihui 2016:4)
b. Kope:

Uma-i memiho hi'a ii'ii=ka.
sore-DET bad very grow=DECL
'The sore grew worse.' (Aumarie 2016:4)
(25) a. Anigibi:

Iiro~iiro uubi ge'ii a'ai a'ai-ta-umo Ioane many~RDUP people happy do FUT-PRS-PL.SBJ John oobodi-ri.
appear-PURP
'Many people will be happy (lit. do happiness) because John appears.'
(Lk 1:14)
b. Kope:

Hiiro~hiiro uubi ge'ii a'ai a'ai-ka-umo Ioare oobodi-ri. many~RDUP people happy do FUT-PRS-PL.SBJ John appear-PURP 'Many people will be happy (lit. do happiness) because John appears.' (Lk 1:14)

In the near past tense, Kope uses -maaka and -maakaumo, but Anigibi uses -va and - vataumo, as in (26)-(27). As Kope does not distinguish $m$ and $v$, Kope -maa and Anigibi - $v a$ are essentially the same morpheme.
(26) a. Anigibi:

Nimo duo tutu-i bia-i n-oroa'oi-vata-umo.
1PL night long-DET not-DET 1P-go.around-NR.PST-PL.SBJ
'All night (lit. not long night) we went around (worked).' (Lk 5:5)
b. Kope:

Rimo duo tutu-i bia-i r-oroa'oia-maka-umo.
1PL night long-DET not-DET 1P-go.around-NR.PST-PL.SBJ
'All night (lit. not long night) we went around (worked).' (Lk 5:5)
(27)
a. Anigibi:

Ie'ova-ro noo irudemea-i tauo orovai-va.
God-NOM 2SG prayer-DET COMP hear-NR.PST
'God has already heard your prayers (just now).' (Lk 1:13)
b. Kope:

Iehoma-ro roo irudemea-i tauo oromai-maka.
God-NOM 2SG prayer-DET COMP hear-NR.PST
'God has already heard your prayers (just now).' (Lk 1:13)
Anigibi uses the conjunction $k a$ in the same way that Kope does, confirming that this is a separate particle (28).
(28)
a. Anigibi:

Tunia'a uubi obo-i i-omaa'emo didimo=ida, Iesu obo=ida all people water-DET PL.OBJ-dip after=LOC Jesus water=LOC omaa'emai=ta. Ka пии iirudemea=ida, aromo-i ai'a dip=DEC CONJ 3SG pray=LOC sky-DET therefore p-ar-a'erai. D.PST-MID-open
'After (John) had dipped (baptised) all the people in the water, (he) dipped Jesus in the water. Then when he (Jesus) was praying, the sky was opened.' (Lk 3:21)
b. Kope:

Turiaha uubi obo-i i-omaaheemo didimo=ida Iesu obo all people water-DET PL.OBJ-dip after=LOC Jesus water oaheema-i=ka. Ka ruи iirudemea=ida aromo-i aiha dip-?=DECL CONJ 3SG pray=LOC sky-DET therefore p-ar-a'erai. D.PST-MID-open
'After (John) had dipped (baptised) all the people in the water, (he) dipped Jesus in the water. Then when he (Jesus) was praying, the sky was opened.' (Lk 3:21)

From the examples given, it can be seen that the phonological form $k a$ has three distinct uses in Kope. The conjunction occurs clause initially, the tense marker occurs
within the verb structure, and the clitic occurs verb finally. In the following section, the function of the tense marking morpheme and of the clitic are further explained.

### 3.2 Functions of the inflectional suffix -ka

It is difficult to assign a single morpheme label to $-k a$, as it covers an unusual time range (near past to future), but in the intermediate past, it is replaced with $-d u$, and in the distant past it is not used at all. Complicating labelling of $-k a$ is that $-d u$ has an irrealis function in the future, present, and intermediate past tenses. This makes it part of both the question and the answer in the intermediate past, while $-k a$ is both question and answer in the near past, yet neither morpheme is used in questions nor answers in the distant past. All of these functions occur in the same position on the verb. Table 6 shows the complexity of labelling either $-k a$ or $-d u$ due to their distribution in tenses, questions and statements.

Through this paper, $-d u$ and $-k a$ are labelled according to their function in a specific context, resulting in a range of glosses that reflect the complexity of the morpheme. For - $k a$ this includes -PRS ( $\S 5.2, \S 5.3$ ) and -IRR.NR.PST (see $\S 5.4$ ), as well as -maaka as -NR.PST (§5.4). The suffix - $d u$ is glossed as - INT.PST or as $-\operatorname{IRR}(\S 5.5)$. See chapter 5 for a full description of how the different tenses work.

TABLE 6. Interrogative and declarative forms of odau ‘to go' in all tenses

|  |  | SG | PL |
| :---: | :---: | :---: | :---: |
| FUT | INT | Odai a-m-a'ai? <br> go Y.N-2\|3.IRR-FUT <br> 'Will he go?' | Odai a-m-a'ai-du-umo? <br> go Y.N-2\|3.IRR-FUT-IRR-PL.SBJ <br> 'Will they go?' |
|  | DEC | Odai a'ai. <br> go FUT <br> 'He will go.' | Odai a'ai-ka-umo. <br> go FUT-PRS-PL.SBJ <br> 'They will go.' |
| PRES | INT | A-m-odau? <br> Y.N-2\|3.IRR-go <br> 'Is he going?' | A-m-odau-du-umo? <br> Y.N-2\|3.IRR-go-IRR-PL.SBJ <br> 'Are they going?' |
|  | DEC | Odau. <br> go <br> 'He is going.' | Odau-ka-umo. <br> go-PRS-PL.SBJ <br> 'They are going.' |
| NR.PST | INT | A-m-odau-ka? <br> Y.N-2\|3.IRR-go-IRR.NR.PST <br> 'Did he go?' | A-m-odau-kaame? <br> Y.N-2\|3.IRR-go-NR.PST.IRR.PL.SBJ <br> 'Did they go?' |
|  | DEC | Odau-maaka. <br> go-NR.PST <br> 'He went.' | Odau-maaka-umo. <br> go-NR.PST-PL.SBJ <br> 'They went.' |
| INT.PST | INT | $A$-g-odau? <br> Y.N-2\|3.IRR.PST-go <br> 'Did he go?' | A-g-odau-du-umo? <br> Y.N-2\|3.IRR.PST-go-IRR-PL.SBJ <br> 'Did they go?' |
|  | DEC | Odau. <br> go <br> 'He went.' | Odau-dи-ито. <br> go-INT.PST-PL.SBJ <br> 'They went.' |


|  |  | SG | PL |
| :---: | :---: | :---: | :---: |
| D.PST | INT | A-g-odau? <br> Y.N-2\|3.IRR.PST-go <br> 'Did he go?' | A-g-odau-mo? <br> Y.N-2\|3.IRR.PST-go-PL.SBJ <br> 'Did they go?' |
|  | DEC | P-odau. <br> D.PST-go <br> 'He went.' | P-odau-mo. <br> D.PST-go-PL.SBJ <br> 'They went.' |

### 3.3 Functions of the clitic $=\boldsymbol{k} \boldsymbol{a}$

The clitic $=k a$ in Kope has numerous functions. This section is a brief overview of some of these functions, but further research is needed to define how and when $=k a$ is used. As this paper is primarily about verbal morphology, this section on the clitic will be brief. It is necessary to include some discussion, as the presence of $=k a$ impacts the choice of verbal morphemes used.

Due to the numerous and complex functions of $=k a$, it has been difficult to establish a gloss for the clitic. Craig (2014) glosses $=k a$ in Urama as an evidentiality marker; Brown et al. (2016a) gloss it as present tense. Brown et al. (2016b:432) say that "sentences marked with the particle $k a$ are declarative clauses." I have chosen to gloss it as a declarative, as this covers most of its functions, and is consistent with how Brown (2009) has glossed the same clitic in Urama.

A team from the University of Auckland (Craig 2014; Brown et al. 2016a; Brown et al. 2016b), have completed significant research into the evidential and interactional meanings of $=k a$, focussing on its use in conversation. A brief summary is provided in §3.3.5. As my data is largely narrative based, the use of $=k a$ includes different functions. Further discourse analysis is needed to clarify the functions of $=k a$ in different text types and contexts.

### 3.3.1 Verbless clauses

The goal of this section is to demonstrate how $=k a$ is used in the formation of verbless clauses. These clauses are not explored in depth, but are given to demonstrate how $=k a$ has a different function to $-k a$. Examples (29)-(30) show how subjects and predicates combine with $=k a$. These predicates can have a range of functions, including attribution, possession and location.
(29) Tata'o-i tutu~'utu=ka.
grass-DET tall $\sim$ RDUP $=$ DECL
'The grass is very tall.'
(30) Duи-i hiito-i goro=ida=ka.
sago-DET bag-DET under=LOC=DECL
'The sago is under the bag.'
Kope also has a verb oo' $a$ 'be' that can be used in stative clauses, in contrast to $=k a$ being used in verbless clauses. Oo'a appears to be used more for emphasis, as examples (19) and (31) show.
(31) Moo go'oto-i paira-i=ka Mia'ogoma-i, Kikori goro=ida

1 SG village-DET name-DET=DECL Meagoma-DET Kikori under=LOC
$\boldsymbol{o o} \mathbf{'}^{\prime}=k a$.
be=DECL
'The name of my village is Meagoma, it is in the Kikori region.' ( $\mathrm{t} 1: 1$ )
The two following examples, (32)-(33), both refer to the same person, Elizabeth, being old. Luke 1:36 uses the combination of oo'a 'be' with pa'uri 'old', whereas Luke 1:18 uses pa'uri=ka for the same purpose. This further demonstrates that oo'a 'to be' is used for emphasis, but that $=k a$ can form a verbless clause on its own.
(32) Moo dubu pa'uri=ka, ka-mia moo oobo-i rautu pa'uri=ka. 1SG man old=DECL CONJ-CONJ 1SG woman-DET with old=DECL 'I am an old man, and my wife is old too.' (Lk 1:18)
(33) ... roo riamabia-i Erisabeta, p-oo'a ruи pa'uri.

2SG older.relative-DET Elizabeth D.PST-be 3SG old
'...your older relative, Elizabeth, she is old (became old a while ago).' (Lk 1:36)

Further analysis, particularly of discourse, is required to better understand the use of $=k a$ for verbless clauses. In the two sentences in example (34), Kope speakers told me that both had the same meaning, but I expect that there is a subtle difference in emphasis that they were not able to describe and that my research has not uncovered.
(34) Moo paira-i Hanna=ka.

1SG name-DET Hanna=DECL

Moo paira-i=ka Hanna.
1SG name-DET=DECL Hanna
'My name is Hanna / Hanna is my name.'

### 3.3.2 Habitual

The first response I was given when I asked what Ruu odai $=k a[3 \mathrm{SG} \mathrm{go}=k a]$ meant, was 'He is always going.' This answer and examples (35)-(37) reflect the use of $=k a$ to express habitual aspect, even though this is not the most common way to express that distinction. The primary means of marking habitual aspect is discussed in §6.3. Petterson (pers.comm.) believes there is a tonal melody that distinguishes the habitual use of $=k a$ from other uses, but tonal research is not within the reach of this study.
(35) Моо таати-i riaramu-i rautu emidio=ka go'oto=ida.

1SG mother-DET family-DET with remain=HAB village=LOC
'My mother and her family lived in town (for many years).'
(36) Ruи hama=ida a-m-emidio, ruu kamara uuho-i=ka, 3SG Highlands=LOC Y.N-2|3.IRR-remain 3SG sweet.potato eat-?=HAB ruu go'ota-ato a-m-emidio, ruu duu-i uuho-i=ka. 3SG vilage-LOC Y.N-2|3.IRR-remain 3SG sago-DET eat-?=HAB
'If he is in the Highlands, he eats sweet potato (regularly), if he is in the village, he eats sago (regularly).'
(37) Ka ruи tu-i iia'oi=ka, rii ohu=ida, ka rii turiaha conj 3SG hand-DET put=HAB 3PL top=LOC CONJ 3PL all mea-ha ii'ii-mo-i=ka. good-FOC grow-PL.SBJ-? $=\mathrm{HAB}$
'And he was laying hands on them (repeatedly), and they all were growing well (repeatedly).' (Lk 4:40)

### 3.3.3 Immediacy

To add immediacy to a narrative, $=k a$ can be used to move the story from event to event in an efficient manner.

When checking Luke 13:2, example (38), there was an extended discussion regarding about whether imoaimai-ka or pimoaimai was the better way to say 'Jesus answered them...' While the difference seemed to be largely about personal preference, it was also expressed that imoaimai-ka had more of a sense of immediacy in the narrative. This discussion was one of the deciding factors in including this brief section on immediacy. Further discourse analysis would make this clearer.
(38) Iesu-ro rii imoaimai-ka...

Iesu-ro rii i-omoaimai=ka
Jesus-NOM 3PL PL.OBJ-answer=DECL

Iesu-ro rii pimoaimai...
Iesu-ro rii p-i-omaimai
Jesus-NOM 3PL D.PST-PL.OBJ-answer
'Jesus answered them...'
In example (39), the story moves quickly forward with the use of three secondary clauses before one fully inflected clause ira'aidиито.
(39) Ata bero- $i$ aa'o- $\boldsymbol{i}=\boldsymbol{k} \boldsymbol{a}$, rimo $i$-odai $=\boldsymbol{k a}$, gido $\sim$ gido another bell-DET spoke-?=DECL 1PL PST-go=DECL song $\sim$ RDUP
oт-ahoro-i=ka, gido~gido i-r-a'ai-du-uто
CAUS-start-?=DECL song~RDUP PL.MID-MID-do-INT.PST-PL.SBJ
oropoi'o-i.
finish-?
'The bell rang again, we went down, we started singing songs, we sang songs, until we finished.' (t3:17)

### 3.3.4 $=\boldsymbol{k} \boldsymbol{a}$ clauses

Verbal clauses marked with $=k a$ have different verbal morphology to primary clauses. Their marking pattern is similar to verbs in dependent clauses, but they are neither dependent clauses, nor background information. In this paper I refer to them as secondary clauses, with the intent of this being a term that can be further clarified in the future. As these clauses can occur independently, it is not appropriate to label them subordinate clauses, even though they show some of those features. While being able to be used an independent clause, they do not have the full markings of the
primary system, so the term secondary is used to place them between the primary system and a subordinate system.

The primary clauses carry the heaviest load of verbal morphology, and occur less frequently. The secondary clauses have a simplified morphology and include only one past tense, whereas the primary marking system has three past tenses; near, intermediate and distant past (chapter 5).

For a subordinate clause to have reduced morphology and not show all distinctions of tense, aspect, mood and person, is often one of its distinguishing features (Cristofaro 2003:3). There is no universal agreement on how to define a subordinate clause. One option is the continuum approach, that steps away from the binary opposition of coordination or subordination and places clauses on a continuum (Cristofaro 2003:22). This approach has relevance to Kope; while secondary and subordinate clause have reduced morphology, the level of reduction varies, which may be due to their place on a continuum.

Another option in defining subordinate clauses, which Cristofaro argues for, is to apply an asymmetry principle, and to base decisions of independence and subordination on the assertion and non-assertion value of a clause, with clauses that are not open to challenge (non-assertive) being considered subordinate (Cristofaro 2003:47). Further research using this principle applied to secondary clauses that use $=k a$ could reveal interesting results, as $=k a$ does have a declarative function that could indicate that these clauses are open to challenge, as they are assumed not to contain shared knowledge.

As Kope is a Papuan language, it was also necessary to consider if $=k a$ is marking verbs as part of a clause chain. Foley (1986:175-177) describes clause chains as containing medial or dependent verbs, which are minimally inflected, and take their specification for status, person and number from following fully inflected verbs, with the contrast of the minimal inflection of dependent verbs and the full inflection of main verbs being one of the distinguishing features between types. Another distinguishing feature of clause chaining is that the main verbs terminate a sentence, and are full sentences in their own right, which the dependent verbs cannot be.

While secondary clauses in Kope do demonstrate the reduced morphology to be expected of medial verbs, they can stand alone as sentences in their own right, and they do not consistently lead up to a final verb, but occur in a much broader distribution. There is no switch reference in Kope, which is also a common feature of clause chaining and medial verbs (Foley 1986:183-192). As clauses marked by $=k a$
do not fit clearly into the description of medial verbs, and the focus of this paper is morphology, they have been called secondary clauses until further research can be completed and a clearer definition established.

Foley (198:197-198) says that Southern Kiwai is an exception to the expectation of clause chaining in Papuan languages, as;
...verbs are fully inflected forms, there being no distinction between the dependent and independent verbs. Sentences are formed by linking fully inflected verbs in a coordinate structure... All verbs in the two examples [given by Foley] are independently inflected and could stand on their own as complete utterances.

While there are significant differences between Southern Kiwai and Kope (which is part of NE Kiwai), including that Southern Kiwai has nothing similar to $=k a$ and Kope does have clauses with reduced inflection, I agree that the Kope clauses formed with $=k a$ are not part of any clause chain, especially as they are complete utterances in their own right.

Secondary clauses usually do not mark the first person, the number of the subject, or the tense, although is it possible to include these, as shown in (8)-(10), (42)-(44). In example (40), the contrast of the level of morphology on the main clause and in the secondary clause is significant, with emeheai=ka and ai-pi-r-emeheai-mo both meaning 'we left.'
(40) Ka rimo Iraua emeheai=ka... ai-pi-r-emeheai-mo. CONJ 1PL Inaua leave=DECL FOC-D.PST-1P-leave-PL.SBJ
'We left Inaua..., we left.' (t1:9,11)
In (41) p-eidai 'he took it' has the full inflection for distant past, whereas the secondary clause $i$-m-omodau $=k a$ 'he carried it for them' is not marked for tense.
(41) Ruи-ro duu tama kere-i aiha p-eidai, 3SG-NOM sago skin piece-DET therefore D.PST-take
$i$-m-omodau $=\boldsymbol{k} \boldsymbol{a}$.
PL.BEN-BEN-carry=DECL
'He took a piece of the sago bark and carried it for them.'
Examples (42)-(43) are some of the few examples where $r$-, marking first person core involvement, is used in a secondary clause, even though is is obligatory in a main clause.
(42) Rimo ruru gaa'u oabu-i r-a'ai=ka teiboro=ida

1PL envelope one carry.across-? 1P-FUT=DECL table=LOC
$r$-ede'a-du-umo.
1P-put-IRR-PL.SBJ
'We will take one envelope across and put it on the table.' (t3:34)
(43) Moo uиmoo r-ii'ii=ka, moo geema ge'ii=ka.

1SG knowledge 1P-grow=DECL 1SG great happy=DECL
'Once I understood (lit. my knowledge grew), I was very happy.'
Example (44) is a rare example of the full marking being used in a secondary clause. Why there is an increase in morphology in some secondary clauses is an area for further research through discourse analysis.
(44) Rimo reto'a tairamu beha pi-r-i-m-odau-mo=ka.

1PL two mosquito.net only D.PST-1P-PL.OBJ-CAUS-go-PL.SBJ=DECL
'We had only taken two mosquito nets.' (t3:10)
Clauses that introduce direct speech frequently use $=k a$, which is part of its function in adding immediacy to a story, although the same clause can be used to refer to an indirect speech act. This is illustrated in (45) and (46).
(45) Iesu-ro aa'o-i=ka, ruи iimatomudio meree- $i$ eito, "Uubi Jesus-NOM say-?=DECL 3SG students person-DET GOAL people idomoi-ati-dio-umo, 50 aibo pa'a gaa'u gaa'u=ida straighten-ITER-PROG-PL.SBJ 50 similar group one $\sim$ RDUP=LOC
ma-emi'ei-tuti-mo. '"
CAUS-sit-DIST-PL.SBJ
'Jesus said to his disciples, "Organise the people to sit in groups of about 50."" (Lk 9:14)
(46) Aa'o raa~ra-iri, ge'ii made aa'o-i=ka, aiha that thing $\sim$ RDUP-PURP happy word say-?=DECL, therefore
p-i-heb-uti i-ma'ai=ka, ruи i-obodo-umo D.PST-PL.OBJ-break-ITER PL.BEN-give=DECL 3SG PST-follow-PL.SBJ
meree-i eito, uubi ma-i-ma'a-ti-mo-iri.
people-DET GOAL people OBLG-PL.BEN-give-ITER-PL.SBJ-PURP
'He gave thanks for those things, therefore broke them into pieces, gave them to the people that followed him, so that they could give them to the people.' (Lk 9:16)

### 3.3.5 Interactional

Craig (2014) did a significant study of the evidential use of = $k a$ in Urama. Brown et al. $(2016 \mathrm{~b}: 432)$ continued this research into how in Urama the particle $=k a$ is used to "mark speaker-knowledge and what the speaker assumes the addressee to know," or the interactional use of $=k a$. They concluded that "sentences marked with the particle $k a$ are declarative clauses, the illocutionary force of which is to assert new information to the Common Ground." This use of $=k a$ is conversational, and my texts are written narratives, transcribed monologues and translated scripture, and the focus of my research has been verbal morphology, making the interactional use of $k a$ outside the reach of this study. Nevertheless, the following two examples from my corpus illustrate the interactional use of $=k a$.

Example (47) is taken from a story of an old lady retelling to her grandson her reaction the first time she saw a white man. It would be reasonable to expect that the grandson would not know her thoughts, and so the clause uses $=k a$, which, as Brown suggests, is used for asserting what the speaker assumes is new to the common ground.
(47) Moo-ro ai-pi-r-iraromo aromo=ida oo’u-maaka dubu=ka. 1SG-NOM FOC-D.PST-1P-think heaven=LOC come-NR.PST man=DECL
'I thought the man had just come from heaven.'
Example (48) is taken from a story in which a conversation is reported between parents who are both guessing what is causing a particular sound and movement. The father's speech does not use $=k a$, indicating he is making a tentative suggestion. The mother's speech does use $=k a$, indicating she is challenging the father with her own
opinion. In fact, though, neither knows the truth: it is a actually pig that is causing the noise and movement, and neither the conjectured crocodile, nor a cassowary,
(48) Ida ao-ro aa'o-i=ka, "Boo! Rimo hibaa." Ida then father-NOM say-?=DECL stop 1PL crocodile suddenly aio-ro p-aa'o, "Aa'a, uia-i=ka." mother-NOM D.PST-say no cassowary-DET=DECL
'Then father said, "Stop! We (have) a crocodile." Then mother said, "No, it is a cassowary."' (t2:16-17)

# Part II <br> Kope verbal morphology 

by Hanna Schulz

## 4. Person and number

### 4.1 Introduction

Kope marks both person and number on verbs. Person and number do not need to be stated with a noun phrase, and the most basic complete sentence in Kope consists of a single word, a fully inflected verb.

Where core arguments are expressed using clauses, the usual word order is SOV, but these elements can be re-organised for emphasis. Beneficiaries and locatives usually occur after the verb, but can also take a different position for discourse reasons.

Person marking distinguishes first person involvement in one of the core arguments of the verb in all situations (\$4.2.1), or of the non-first person as subject in a limited number of situations (\$4.2.2).

Foley (1986:105) states that a nominative-accusative system is "the overwhelmingly common verbal case-marking schema for Papuan languages," and Kope fits within this generalisation. The subject of both transitive and intransitive verbs are marked in the same ways. On verbs, the obligatory suffixes - $\varnothing$ 'singular', -idol-udo 'dual', -bii...-umo 'trial', and -umo 'plural' agree with the number of the subject. In many situations, it is only the verbal morphology that indicates the number of the subject, as many nouns do not have a plural form.

There is an optional nominative suffix -ro, which is used when clarity is needed, and that occurs on the subject noun phrase of both transitive and intransitive verbs. Brown (2009:40-54) analyses -ro in Urama as an agency marker, recognising that it also has an emphatic role. Brown et al. (2016a:24) call -ro a nominative case marker in Urama. As nominal marking is not the focus of this paper, this suffix is not discussed further.

The number of the object is not marked on the verb when it is singular. When the object is plural, $i$ - deletes the initial vowel of the root or of the following prefix. Clifton (1995:56) suggests this is a plural absolutive marker, but as it only occurs on
transitive verbs in primary clauses when the object is plural, I have analysed it as a plural object marker (§4.3.5).

### 4.2 Person marking

The involvement of the first person in one of the core arguments of a verb is obligatorily marked in Kope. Non-first person marking occurs in some situations, but not in all, as the non-first person prefix is primarily an irrealis marker. See $\S 8.3$ for a discussion of irrealis.

### 4.2.1 First person core involvement

Foley (1986:96) defines core relations as follows:
I will define the core participants or case relations (those likely to be expressed by verbal affixation) as the performer of an action or actor and the corresponding undergoer. The peripheral relations are those associated with adjuncts of the action, such as instruments or those associated with its locational or temporal coordinates. Between these two rather clear-cut categories there is an indistinct middle ground: the typically animate, intended goal of an action, i.e. its beneficiary or the recipient of verbs like 'give'.

In Kope, the core relations which involve the first person are consistently marked on the verb with $r$-, and this includes the beneficiary or recipient, that Foley refers to as the "indistinct middle ground," as well as the actor and the undergoer. This is consistent with Urama, which uses the morpheme $n$ - for the same function, which Brown et al. (2016a:27) say "marks the first person of any argument, whether it is a subject, direct object, or indirect object." I refer to this as "core involvement."

Marking the core involvement of the first person is an unusual feature when compared to how world languages mark person, as can be seen when looking at the typology presented by Siewierska (2013).

Examples (1)-(2) demonstrate the most common use of $r$ - to mark the first person as the subject of both transitive and intransitive verbs.
(1) Moo hepu-i r-ogoihuti.

1SG earth-DET 1P-dig.till
'I till the soil.'
(2) Duo ata-i aiha pi-r-oo'и-ито. night other-DET therefore D.PST-1P-come-PL.SBJ
'We came the next night.'
In the examples below, two sentences from the same story demonstrate how $r$ - is used both for the person being placed (3), and for the people doing the placing (4), as both actor and undergoer are core relations. Compare this to (5), where the first person is not involved, and $r$ - is not used.
(3) Moo abea-i-ro sikuri=da pi-r-ede'a Karati=ato.

1SG father-DET-NOM school=LOC D.PST-1P-put Karati=LOC
'My father put me at school in Karati.' ( $\mathrm{t} 1: 2$ )
(4) Aa'o burio=ida тоо ramи-i Ru'aupo, Baimurи
that year=LOC 1SG older.brother-DET Ru'aupo Baimuru
sikuri $=d a \quad$ pi-r-ede'a-umo.
school=LOC D.PST-1P-put-PL.SBJ
'That year we put my older brother, Ru'aupo, at Baimuru school.' (t1:7)
(5) ...ka hiei=da p-i-de'a-umo.

CONJ there=LOC D.PST-PL.OBJ-put-PL.SBJ
'...and they put them there.' (t3:5)
Example (6) demonstrates $r$ - as marking the first person as the recipient. (The verb ema'ai means 'to give' although this may not be immediately evident from the morphemes that form the word.)
(6) Pai-dubu-i-ro r-i-m-a'ai ara raa geega-i.
chief-man-DET-NOM 1P-PL.BEN-BEN-do this thing big-DET
'God (lit. chief man) has given us this big thing.' (t2:24)
The examples below demonstrate the use of $r$ - in questions, as both the agent (7) and the undergoer (8), in both content and polar (9) questions.
(7) Moo ra'u r-om-odau?

1SG what 1P-CAUS-go
'What am I carrying?'
(8) Moo bo'u-ro r-ahimodi?

1 SG who.SG-NOM 1P-touch
'Who touched me?' (Lk 8:45)
(9) Rimo go'u a-r-odau-du-umo?

1PL forage.fish Y.N-1P-go-IRR-PL.SBJ
'Are we going fishing?'
In the future tense, $r$ - is a prefix on the future auxiliary $a$ 'ai, rather than on the root. Person marking morphemes, and the polar yes-no $a$-, are the only morphemes that vary their position in this way, as shown in (10).
(10)

| pi-r-odau-mo | $r$-odau-du-umo |
| :---: | :---: |
| D.PST-1P-go-PL.SBJ | 1P-go-INT.PST-PLSBJ |
| 'we went (distant past)' | 'we went (intermediate past)' |
| r-odau-maaka-umo | $\boldsymbol{r}$-odau-ka-umo |
| $1 \mathrm{P}-\mathrm{go}-\mathrm{NR}$. PST-PL.SBJ | 1P-go-PRS-PL.SBJ |
| 'we went (near past)' | 'we are going' |
| odai r-a'ai-ka-umo | $\boldsymbol{A}$-r-odau-du-umo? |
| go 1P-FUT-PRS-PL.SBJ | Y.N-1P-go-IRR-PL.SBJ |
| 'we will go' | 'Are we going?' |
| Odai a-r-a'ai-du-umo? | Odai a-m-a'ai? |
| go Y.N-1P-FUT-IRR-PL.SBJ | go Y.N-2\|3.IRR-FUT |
| 'Will we go?' | 'Will you/he/she go? |

Although most secondary clauses do not mark first person core involvement (see 3.3.4), the morpheme $r$ - does occur in that context on some occasions, as in examples (42)-(43) in 3.3.4.

### 4.2.2 Non-first person involvement

While first person core involvement marking is obligatory on all verbs in primary clauses, the non-first person marker $m$ - has a much more limited range of use. In Urama, Brown et al. (2016a:28) state that "second and third person subject marking occurs in interrogative clauses only," while Brown (2009:22) gives an example of it
being used in a statement. I have labelled the non-first person marker $m$ - ' $2 \mid 3$.IRR', including an irrealis function, as it is used in questions (11)-(12), for possibility (13), and in instructions (14)-(15). The answers to the questions in examples (11)-(12) demonstrate the contrast of the obligatory $r$ - for first person core involvement in the declarative, with the absence of non-first person marking in the declarative.
(11) Ri'o ime a-m-ii-ho-du-umo?

2PL crab Y.N-2|3.IRR-PL.OBJ-eat-IRR-PL.SBJ
'Are you-PL eating crabs?'
Rimo ime r-ii-ho-ka-umo.
1PL crab 1P-PL.OBJ-eat-PRS-PL.SBJ
'We are eating crabs.'
(12) Rii ra'u m-ii-ho-du-umo?

3PL what 2|3.IRR-PL.OBJ-eat-IRR-PL.SBJ
'What are they eating?'
Rii ime ii-ho-ka-umo.
3pL crab PL.OBJ-eat-PRS-PL.SBJ
'They are eating crabs.'
(13) Roupa, rii du a-m-ototo-du-umo.
maybe 3PL sago Y.N-2|3.IRR-beat-IRR-PL.SBJ
'Maybe they are beating sago.'
(14) ...ohio-bai'o-i-ro sepika-i m-i-m-odau-du-umo. boy-group-DET-NOM speaker-DET 2|3.IRR-PL.OBJ-CAUS-go-IRR-PL.SBJ
' ...the boys should take the speakers.' (t3:29 modified)
Ai-m-itohiti, $\quad \boldsymbol{m}$-itohiti $\boldsymbol{m}$-ioro-die geega=ka.
FOC-2|3.IRR-tie 2|3.IRR-tie 2|3.IRR-go.up-IRR.SG big=DECL
'You would tie them, tie them, and it would go up (in a) big (pile).'
In the distant and intermediate past, $m$ - becomes $g$ - in irrealis clauses, but remains $m$ in the near past. Compare examples (13) and (16):
(16) Tehata roupa ruu du a-g-ototo.
before.yesterday maybe 3SG sago Y.N-2|3.IRR-beat
'Maybe he beat sago (before).'
(17) Tetuи rii du a-g-ototo-du-umo?
yesterday 3PL sago Y.N-2|3.IRR-beat-IRR-PL.SBJ
'Yesterday, did they beat sago?'
While $m$ - occurs without $a$ - (the polar question marker) in content questions in the near past, present and future tenses, $g$ - does not occur without $a$ - in content questions in the intermediate and distant past. The first and non-first person marking vary from each other in this regard, as first person involvement marking is consistent across all tenses, and on both content and polar questions. This is shown in Table 7.

TABLE 7. QUEStions FOR $O D A U$ ' GO' IN 1P.PL AND 3p.PL IN ALL TENSES

|  | 1P-PL.SBJ |  |
| :---: | :---: | :---: |
|  | content | polar |
|  | '(Where) are we going?' | 'Are we going?' |
| FUT | odai $\boldsymbol{r}$-a'ai-du-umo? | odai a-r-a'ai-du-umo? |
| PRES | $\boldsymbol{r}$-odau-du-umo? | $\boldsymbol{a}$-r-odau-du-umo? |
| NR.PST | $\boldsymbol{r}$-odau-ka-ame? | $\boldsymbol{a}$-r-odau-ka-ame? |
| INT.PST | $\boldsymbol{r}$-odau-du-umo? | $\boldsymbol{a}-\boldsymbol{r}$-odau-du-umo? |
| D.PST | $\boldsymbol{r}$-odau-mo? | $\boldsymbol{a}$-r-odau-mo? |
|  | 3P-PL.SBJ |  |
|  | content | polar |
|  | '(Where) are they going?' | 'Are they going?' |
| FUT | odai m-a'ai-du-umo? | odai $\boldsymbol{a}$-m-a 'ai-du-umo? |
| PRES | $\boldsymbol{m}$-odau-du-umo? | $\boldsymbol{a}$-m-odau-du-umo? |
| NR.PST | $\boldsymbol{m}$-odau-ka-ame? | $\boldsymbol{a}$-m-odau-ka-ame? |
| INT.PST | odau-du-umo? | $\boldsymbol{a - g}$-odau-du-umo? |
| D.PST | odau-mo? | $\boldsymbol{a - g}$-odau-mo? |

While the $g$ - is not used in content questions in the intermediate and distant past tenses, it can be used without $a$ - to express irrealis in those tenses. This is done when talking about "what could have been." Example (18) shows $m$ - and $g$ - used in contrast with each other.

'If it will break to pieces it is because they fight themselves..., if it had already previously broken to pieces, the man's house will not stand.' (Lk 11:17)

### 4.3 Number marking

Kope verbs are marked with the number of the subject of both transitive and intransitive verbs, distinguishing between single, dual, trial and plural subjects. There is also object marking for non-singular objects (§4.3.5).

It has been suggested by Ray (1933:29) and Foley (1986:128-131) that $i$ - in Southern Kiwai is plural absolutive marking, a claim which Clifton (1995:56) also makes for Kope. I argue that, in Kope $i$ - has multiple homophones, each with different functions, including marking a plural object ( $\S 4.3 .5$ ), plural beneficiary ( $\S 9.2$ ), plural middle voice ( $\S 9.3$ ), and past tense marking for secondary and subordinate clauses (§5.7).

The primary distinction in subject marking is between singular, with a null marker, and plural, which is marked. While careful speech has a separate form for dual and trial (19), it is common for people to use plural marking for plural, dual, and trial subject marking in everyday speech. It is possible to use either the dual or trial pronoun, with plural marking on the verb, and for this to be acceptable (20), even though people say that the trial is the 'proper' form.
(19)
a. Ruu oti.
b. Rii-ti oti-ka-ido.
3PL-DU stand-PRS-DU
'They-2 stand.'
c. Rii-bii oti-bii-ka-umo.
d. Rii oti-ka-umo.
3PL-TRI stand-TRI-PRS-PL.SBJ
3PL stand-PRS-PL.SBJ
'They-3 stand.'
'They stand.'
(20) Rii-bii oti-ka-umo.

3PL-TRI stand-PRS-PL.SBJ
'They-3 stand.'
Object marking is separated into single, which is not marked (21), and plural, which is marked with $i$ - (22). The addition of the plural marker usually deletes the initial vowel of the verb root. When the initial vowel of the root is long (as in uuho 'eat'), the plural $i$ - is also lengthened to $i i-$.
(21) Roo duи uиho.

2SG sago eat
'You eat sago.'
(22) Roo duu-ire raa-ire-i ii-ho.

2SG sago-CONJ fish-CONJ-DET PL.OBJ-eat
'You eat sago and fish.'

### 4.3.1 Single subject marking

Single subject marking is shown in Table 8.
TABLE 8. Single subject marking with $O D A U$ ‘ $G$ ' ' IN ALL TENSES

|  | 1SG | 2SG | 3SG |
| :--- | :--- | :--- | :--- |
| FUT | odai r-a'ai | odai a'ai | odai a'ai |
| PRES | r-odau | odau | odau |
| NR.PST | r-odau-maaka | odau-maaka | odau-maaka |
| INT.PST | r-odau-die | odau-die | odau |
| D.PST | pi-r-odau | p-odau | p-odau |

The single subject is the simplest of all the marking systems in Kope as it is not marked in most situations. The one exception to this is that in the intermediate past,
-die is used for 1 SG and 2 SG , which contrast with -duumo for 1 PL and 2 PL in this tense. This is also the only tense in which the second and third person are different.

As the 3 SG intermediate past is not marked, it has the same form as 3 SG present tense. Cues within the text tell the audience which time frame is being referred to, but tone and length also play a role (see §5.4).

### 4.3.2 Dual subject marking

TABLE 9. DUAL SUBJECT MARKING WITH ODAU ‘GO’ IN ALL TENSES

|  | 1DU | 2\|3DU |
| :--- | :--- | :--- |
| FUT | odai $r$-a'ai-ka-ido | odai a'ai-ka-ido |
| PRES | r-odau-ka-ido | odau-ka-ido |
| NR.PST | r-odau-maaka-ido | odau-maaka-ido |
| INT.PST | r-odau-du-ido | odau-du-ido |
| D.PST | pi-r-odau-ido | p-odau-ido |

The dual subject is marked with -ido or -udo, which is a dialect variation. Wouobo and Mira Goiravi use -udo, while Ubuo and all downstream villages use -ido, as shown in (23)-(24). The use of -kaudo or -kaido is one of the main differences which Kope speakers point out when asked about the dialect difference along this line. It is also apparent in the formation of the intermediate past or irrealis dual as -du-ido or -du-udo (25). In this study, the -ido morpheme is given preference, as it shows the morphophonemic situation of $-i$ at a morpheme boundary, while the situation with $-u$ is already shown by the plural marking morpheme -umo.
(23) Rii-ti ai-odau-ka-udo.

3PL-DU FOC-go-PRS-DU
'They-2 go.' (Goiravi and Wouobo dialect)
(24) Rii-ti ai-odau-ka-ido.

3PL-DU FOC-go-PRS-DU
'They-2 go.' (Ubuo and downriver dialect)
(25) Tetuu rii-ti go'u odau-du-ido. yesterday 3PL-DU forage.fish go-INT.PST-DU
'Yesterday they- 2 went fishing.'
When the morpheme -ido meets with a verb-final vowel $u$, such as in odau 'to go', the $u$ is deleted, resulting in odaido, 'two went', as in (26)-(27).
(26) Ri'oiti podaido.
ri'o-i-ti p-odau-ido
2PL-DET-DU D.PST-go-DU
'You-2 went.'
(27) Odaido, Paidubui atohetai...
odau-ido pai-dubu-i atohetai
go-DU chief-man-DET ask
'(They-2) went to ask the Lord...' (Lk 7:19)
The dual can also be used to highlight two main characters in an event. In example (28) the context makes it clear that there were more people at the meal than Jesus and the leader of the Pharisees, but the dual is used to emphasise those two people.
(28) Iesu ai-p-odau Pariseia uubi epuu-horo dubu ata Jesus FOC-D.PST-go Pharisee people head-bone man other moto-ato ma-ii-ho-i-do-iri. house-LOC OBLG-PL.OBJ-eat-?-DU-PURP
'Jesus went, to the house of the leader of the Pharisee people, so that they could eat together.' (Lk 14:1)

### 4.3.3 Plural subject marking

Plural subject marking is being described before the trial subject marking, as the trial is based on the plural. Plural marking uses the suffix -umo and is consistent across tenses and dialects (29)-(30). The $u$ in -umo is not always evident due to morphophonemics, but is part of the underlying form.

TABLE 10. Plural subject marking with $O D A U$ 'GO' IN ALL TENSES

|  | $\mathbf{1 P L}$ | $\mathbf{2 \| 3 P L}$ |
| :--- | :--- | :--- |
| FUT | odai r-a'ai-ka-umo | odai a'ai-ka-umo |
| PRES | r-odau-ka-umo | odau-ka-umo |
| NR.PST | r-odau-maaka-umo | odau-maaka-umo |
| INT.PAST | r-odau-du-umo | odau-du-umo |
| D.PST | pi-r-odau-umo | p-odau-umo |

(29) Ri'o ga'a-i mahuumo ka-mia pehoo i-de'a-umo.

2PL bow-DET spear CONJ-CONJ spear PL.OBJ-put-PL.SBJ
'You put down your bows and arrows, and also your spears.'
(30) Bavi go'oto=ida tutuu tauo pi-r-emidio-umo...

Bavi village=LOC long COMP D.PST-1P-remain-PL.SBJ
'We had already stayed a long time at Bavi village...'

### 4.3.4 Trial subject marking

Cysouw (2013) states that "trial or paucal marking only occurs among Austronesian languages, but within this linguistic stock it is rather widespread." As Kope is a nonAustronesian language, but has a trial pronoun and trial subject marking on verbs, I must disagree with this statement. The trial is long attested to in the Kiwaian family, with Ray reporting it in Southern Kiwai (Ray 1933), and his examples being further explored by Foley (1986: 72, 129-133). In conversation with P. Carr, C. Carr and K. Allen, who between them work in translation and literacy with the Bamu and the Waboda languages, also members of the Kiwaian family, they reported a paucal, though not a trial, in these languages. Having tested the use of the trial marking -bii in various contexts in Kope, I am confident that it is truly a trial marking, not paucal, as it cannot be used for four subjects. Dixon (2010:10) states that paucal is more common than trial in a four-term system, so Kope is a rarity in having this feature. As Foley points out correctly regarding Southern Kiwai (Foley 1986:72), this is even more striking as there is no number three, but the compound reto'a-gaa'u 'two-one.'

The trial subject marking operates differently to the dual or plural (31). Where the dual nominal suffix is $-t i$ and the verbal suffix is -ido, the trial has the same form for both nominal and verbal suffixes, -bii. Where the dual and plural only use one suffix,
replacing each other in the same position on the verb, the trial uses plural marking in this position, as well as the trial suffix closer to the verb root.
(31) Rii-ti odau-ka-ido.

3PL-DU go-PRS-DU
'They-2 go.'

Rii-bii odau-bii-ka-umo.
3PL-TRI go-TRI-PRS-PL.SBJ
‘They-3 go.'

Rii odau-ka-umo.
3PL go-PRS-PL.SBJ
'They go.'
The trial suffix is used less consistently than the dual or plural markers, which is probably the cause of people being inconsistent in how they use trial subject marking in the future tense. In discussion with the translation team, I was told that both the options in Table 11 are correct.

Table 11. Trial subject marking with $O D A U$ ' $G$ ' ' in all tenses

|  | $\mathbf{1 P L}$ | $\mathbf{2 \| 3 P L}$ |
| :--- | :--- | :--- |
| FUT | odai r-a'ai-bii-ka-umo | odai a'ai-bii-ka-umo |
|  | odai-bii r-a'ai-ka-umo | odai-bii a'ai-ka-umo |
| PRES | r-odau-bii-ka-umo | odau-bii-ka-umo |
| NR.PST | r-odau-bii-maaka-umo | odau-bii-maaka-umo |
| INT.PST | r-odau-bii-du-umo | odau-bii-du-umo |
| D.PST | pi-r-odau-bii-mo | p-odau-bii-mo |

In my field research I have found the -bii suffix used only on a few occasions, when people are being very careful to teach me what they consider the 'correct' form. When eliciting examples and using a picture that indicates three people, and the trial pronoun is used, it is common that plural, not trial, marking will be used on the verb, as in (32). This indicates that although -bii is considered 'correct' language use and employed in translation (33), it is not part of everyday speech for many Kope people.
(32) Rii-bii go'u odai-a'ai-ka-umo.

3PL-TRI fishing go-FUT-PRS-PL.SBJ
'They-3 will go fishing.'
(33) $K a$ ruи rautu atuha p-i-r-aimai-bii-mo

CONJ 3SG with together D.PST-PL.MID-MID-return-TRI-PL.SBJ
Nasareta $=$ eito.
Nazareth=GOAL
'Then he (Jesus) returned with them (his parents) towards Nazareth.' (Lk 2:51)

### 4.3.5 Object marking

Plural objects are regularly marked in all clause types with $i$. It is non-singular marking, distinguishing the number of objects between one, and greater than one (34)-(39). This is in agreement with Wurm's analysis of the Kiwaian family (1977:897), and with Brown et al. (2016: 26) who state that in Urama "agreement with plural objects is marked on the verbal stem with the prefix $i$-."

As stated in the introduction to this section, $i$ - has several homophones. It marks a plural beneficiary (§9.2), plural middle voice (§9.3) and is past tense marking for secondary and subordinate clauses (§5.7).

The plural marking $i$ - deletes the initial vowel of the root or of any valency increasing morpheme that it precedes, as in i-bodi in (36)-(37) from obodi 'follow', and in $i-a$ ' $a$ in (40)-(41) from ea'a 'see'.
(34) Umи-i-ro boomo-i obodi-dio. dog-DET-NOM pig-DET follow-PROG
'The dog is chasing the pig.'
(35) Umи-i-re boomo-i-re-ro kokoro-i obodi-dio. dog-DET-CONJ pig-DET-CONJ-NOM hen-DET follow-PROG
'The dog and the pig are chasing the hen.'
(36) Umu-i-ro boomo-re kokoro-re-i i-bodi-dio. dog-DET-NOM pig-CONJ hen-CONJ-DET PL.OBJ-follow-PROG
'The dog is chasing the pig and the hen.'
(37) Umu-i-ro kokoro-i i-bodi-dio. dog-DET-NOM hen-DET PL.OBJ-follow-PROG
'The dog is chasing hens.'
(38) Turiaha maboro-i i-he'uo bobo-i rio-i eito! all marble-DET PL.OBJ-throw well-DET inside-DET GOAL 'Throw all the marbles into the well!'

Ray (1933:46) describes dual and trial object marking in Southern Kiwai, but these do not exist in Kope. On numerous occasions I have tested for this marking system, and only ever found a basic single-plural distinction, as in (39)-(41).
(39) Ruu-ro go'ota ea'a.

3SG-NOM coconut see
'She sees a coconut.'
(40) Ruu-ro reto'a go'ota i-a'a.

3SG-NOM two coconut PL.OBJ-see
'She sees two coconuts.'
(41) Ruu-ro hiiro go'ota i-a'a.

3SG-NOM many coconut PL.OBJ-see
'She sees many coconuts.'
At least two verbs have unique forms to express singular and plural objects, both with initial $i$. Itai is 'cook one thing' (42), while itoi is 'cook many things' (43). Ididi is 'build one thing' (44), while ititi is 'build many things' (45).
(42) Ruи-ro gaa'ubuo raa-i itai-a'ai.

3SG-NOM one fish-DET cook.one-FUT
'She will cook one fish.'
(43) Ruи-ro hiiro raa-i itoi-a'ai.

3SG-NOM many fish-DET cook.many-FUT
'He will cook many fish.'
(44) Rii-ro moto-i ididi-ka-umo.

3PL-NOM house-DET build.one-PRS-PL.SBJ
'They are building a house.'
(45) Rii-ro moto-i ititi-ka-umo.

3PL-NOM house-DET build.many-PRS-PL.SBJ
'They are building houses.'

## 5. Tense

### 5.1 Tense: introduction

Kope has five primary tenses, forming an asymmetrical tense system, with three past tenses (near, intermediate and distant), a present and a future tense. An asymmetrical tense system like this is not unusual, as "the past is a known and established fact while the future is unknown and potential" (Chung and Timberlake 1985:204), making it easier to be specific about the past. There is a secondary past tense in Kope that covers the time frame of the three primary past tenses, but is used in secondary and subordinate clauses (§5.7).

There is no standard for naming these three past tenses. Dahl \& Velupillai (2013) state that it is common for there to be two degrees of remoteness in the past tense, with 'hodiernal' being used for today's past and 'hesternal' for events that occurred before today. Further divisions are less common, but do occur in languages across the world. Comrie (1985:90) reports a three-way division in Haya, similar to that in Kope, using the terms 'hodiernal', 'hesternal' and 'remote,' although he also suggests the use of 'pre-hesternal' to refer to events that occurred before yesterday. Foley (1986:160) refers to tense systems in Enga and Alamblak that have a similar threeway division to Kope as "the immediate past, for events earlier today; the near past, for the events of yesterday; and the distant past, for events before yesterday."

In describing Urama, Brown et al. (2016a: 29) use the terms 'near', 'intermediate' and 'distant' past. I have chosen to use these same terms in Kope, as Urama is closely related, and consistency of terms between the two will aid further research and comparisons. As these terms are also relatively accessible by a non-linguist, unlike hodiernal and hesternal, it will hopefully make this description of Kope verbs more accessible to a wider audience.

Wurm (1977:897) reports three future tenses in Southern Kiwai, and Brown et al. (2016a:29) demonstrate that Urama has two future tenses: near and future. I have found no evidence of more than one future tense in Kope. That two closely related languages such as Kope and Urama should have differing degrees of remoteness in
their tense system is not unique (Comrie 1985:87). In personal conversation with Robert Petterson, who works in literacy with all the NE Kiwai languages, he says that he has observed the two future tenses in Urama, using a'ai 'to do' as the near future auxiliary, and $o$ ' $u$ 'come' as the distant future auxiliary. This is in agreement with Brown et al. (2016: 30-31). In contrast, Kope has a single future tense that uses $a$ 'ai 'to do' as the future auxiliary, while Gibaio, which is located between the Kope and Urama people, use $o$ ' $u$ 'come' as their sole future tense auxiliary.

The five Kope tense forms are relative to the time of utterance. Near past tense refers to events that have happened earlier the same day or during the previous night, intermediate past is used for events that occurred the previous day, and distant past refers to any time before yesterday. The line between the previous afternoon, which uses the intermediate past, and the previous night, which use the near past, has been described to me as related to when it is dark enough that you cannot recognise someone.

The secondary past tense is not specific to any of the three other past tenses. This is used in combination with the other past tense markers and keeps the narrative flowing (see §3.3.4). It occurs on secondary clauses and subordinate clauses. I have already referred to this in $\S 4.3 .5$, to separate it from the identical morpheme indicating plurality, but in $\S 5.7$ below will look at its role as a tense marker.

### 5.2 Present tense

The present tense is used when the time of an action coincides with the time of speaking. As Comrie (1985:37) points out, this includes "situations which occupy a much longer period of time than the present moment but which nonetheless include the present moment within them." It is this use of the present tense that means odau can be glossed as both 'she goes' and 'she is going.'

In Kope, the present tense is the form with the least morphology. The second/third person singular present is the basic verb root that is used for lexical entries. First person involvement, as well as dual, trial and plural subjects are marked consistently (§4.3). The singular has no tense marked, while the non-singular uses the suffix $-k a$.

Table 12. Present tense paradigm for $O D A U ~ ‘ G O ’$

|  | $\mathbf{1 P}$ | $\mathbf{2 \| 3 \mathbf { 3 P }}$ |
| :--- | :--- | :--- |
| SG | r-odau <br> 1P-go | odau <br> go |
| DU | r-odau-ka-ido <br> 1P-go-PRS-DU | odau-ka-ido <br> go-PRS-DU |
| TRI | r-odau-bii-ka-umo <br> 1P-go-TRI-PRS-PL.SBJ | odau-bii-ka-umo <br> go-TRI-PRS-PL.SBJ |
| PL | r-odau-ka-umo <br> 1P-go-TRI-PRS-PL.SBJ | odau-ka-umo <br> go-TRI-PRS-PL.SBJ |

Questions in the present tense take - $d u$ 'IRR' instead of - $k a$ 'PRS', as well as taking the 2|3.IRR $m$ - for questions about the seond or third person. All questions take $a-$ 'Y.N', if the answer can only have a polar yes-no answer. See Table 13 and example (1).

TABLE 13. PRESENT TENSE POLAR QUESTIONS FOR ODAU 'GO'

|  | 1P | 2\|3P |
| :---: | :---: | :---: |
| SG | $\begin{aligned} & \boldsymbol{a}-\boldsymbol{r} \text {-odau? } \\ & \text { Y.N-1P-go } \end{aligned}$ | $\begin{aligned} & \boldsymbol{a} \text {-m-odau? } \\ & \text { Y.N-2\|3.IRR-go } \end{aligned}$ |
| DU | $\boldsymbol{a}$-r-odau-du-ido? <br> Y.N-1P-go-IRR-DU | $\boldsymbol{a}$-m-odau-du-ido? <br> Y.N-2\|3.IRR-go-IRR-DU |
| TRI | a-r-odau-bii-du-umo? <br> Y.N-1P-go-TRI-IRR-PL.SBJ | $\boldsymbol{a}-\boldsymbol{m}$-odau-bii-du-umo? <br> Y.N-2\|3.IRR-go-TRI-IRR-PL.SBJ |
| PL | $\boldsymbol{a}$-r-odau-du-umo? <br> Y.N-1P-go-IRR-PL.SBJ | $\boldsymbol{a}$-m-odau-du-umo? <br> Y.N-2\|3.IRR-go-IRR-PL.SBJ |

(1) a. Roo ra'u m-ododiai?

2SG what 2|3.IRR-make
'What are you making?'
b. Moo keta-i r-omotu.

1SG pandanus.mat-DET 1P-weave
'I'm weaving a pandanus mat.'

### 5.3 Future tense

While many languages have a future tense that is also an irrealis, as the future is as yet unrealised (Dixon 2010:153-154; Kroeger 2005:149), Kope has a future tense that is distinct from the irrealis ( $\S 8.3$ ). The future tense consists of a compound verb of the root verb and $a$ 'ai 'do'. Prefixes for question and person attach to the auxiliary, as do suffixes for tense and number, as in (5). All other morphemes attach to the verb root, as illustrated in example (10) in §4.2.1.

The auxiliary $a$ 'ai, plus morphemes, is written as a separate word, although it functions as a compound verb. The separation in writing is due to the auxiliary a'ai not being phonologically connected to the root portion of the compound, as a glottal stop is pronounced between the final V of the verb root, and the initial $a$ of the auxiliary, see (2)-(5).
(2) Rii or-om-oti a'ai-ka-umo.

3PL MID-CAUS-stand FUT-PRS-PL.SBJ
'They will wait for each other.'
(3) Umui-ro boomo-ra kokoro-rai ibodidio a'ai. umu-i-ro boomo-ra kokoro-ra-i i-obodo-dio a'ai dog-DET-NOM pig-CONJ hen-CONJ-DET PL.OBJ-follow-PROG FUT 'The dog will chase (lit. continually follow) the pig and the hen.'
(4) Ubii-ro hiiro raai rehai-da iomuti ubii-ro hiiro raa-i reha-ida i-omia-uti people-NOM many fish-DET carry.basket=LOC PL.OBJ-place.inside-ITER
a'ai kaumo.
a'ai-ka-umo
FUT-PRS-PL.SBJ
'The people will put lots of fish into the carrying baskets.'
a. Rimo-i-ti r-emidio-ka-ido.

1PL-DET-DU 1P-remain-PRS-DU
'We-2 are staying.'
b. Rimo-i-ti emidio r-a'ai-ka-ido.

1PL-DET-DU remain 1P-FUT-PRS-DU
'We-2 will stay.'
As mentioned in $\S 4.3 .4$, and shown in Table 11, Table 14 and Table 15, the use of the trial marker - bii has two places in which it can be used in the future tense.

Table 14. Future tense paradigm of $O D A U$ ' $G O$ '

|  | 1P | 2\|3P |
| :---: | :---: | :---: |
| SG | odai r-a'ai | odai a'ai |
|  | go 1P-FUT | go FUT |
| DU | odai r-a'ai-ka-ido | odai a'ai-ka-ido |
|  | go 1P-FUT-PRS-DU | go FUT-PRS-DU |
| TRI | odai r-a'ai-bii-ka-umo | odai a'ai-bii-ka-umo |
|  | go 1P-FUT-TRI-PRS-PL.SBJ | go FUT-TRI-PRS-PL.SBJ |
|  | odau-bii r-a'ai-ka-umo | odau-bii a'ai-ka-umo |
|  | go- TRI 1P-FUT-PRS-PL.SBJ | go-TRI FUT-PRS-PL.SBJ |
| PL | odai a'ai-ka-umo | odai a'ai-ka-umo |
|  | go 1P-FUT-PRS-PL.SBJ | go FUT-PRS-PL.SBJ |

It is common for people to shorten $a^{\prime} a i$ to 'ai in both spoken and written Kope, as in (6), and particularly in secondary clauses (7).
(6) Ka omoabai ubii oo'ui'ai kaumo.
ka omoabai ubii oo'u-i a'ai-ka-umo
CONJ help people come-? FUT-PRS-PL.SBJ
'The helping people will come.' ( $\mathrm{t} 3: 35$ )
(7) Rii moto-i rio=ida emidio-i-’ai=ka.

3PL hous-DET inside=LOC remain-?-FUT=DECL
'They will stay in the house.'
As the trial form is not used regularly, people are inconsistent in how they use it with the future tense. The tendency is to use the trial marker - bii as either a suffix to the verb root, or to the auxiliary, in both questions and statements. In discussion with the translation team, I was told that both (8) and (9) are acceptable, but that (10) is not, even though I have it on a recording. It is possible the recording was the result of
someone trying too hard to use an unfamiliar form, and so doubling up out of uncertainty.
(8) Rii-bii dubai ii-ho-i-bii a'ai-ka-umo.

3PL-TRI banana PL.OBJ-eat-?-TRI FUT-PRS-PL.SBJ
'They-3 will eat bananas.'
(9) Rii-bii dubai ii-ho-i a'ai-bii-ka-umo.

3PL-TRI banana PL.OBJ-eat-? FUT-TRI-PRS.FUT-PL.SBJ
'They- 3 will eat bananas.'
(10) *? Rii-bii dubai ii-ho-i-bii a'ai-bii-ka-umo.

3PL-TRI banana PL.OBJ-eat-?-TRI FUT-TRI-PRS-PL.SBJ
'They- 3 will eat bananas.'
In the future tense, question markers are on the verbal auxiliary $a$ 'ai, not on the root verb, as is person marking. The change from $-k a$ to $-d u$ is the same as in the present tense, see (11) and Table 15.
(11) Ri'o oo'ui ama'ai duumo?
ri'o oo'u-i a-m-a'ai-du-umo
2PL come-? Y.N-2|3.IRR-FUT-IRR-PL.SBJ
'Will you-PL come?'

Table 15. FUtURE tense polar questions for odau 'go'

|  | 1P | 2\|3P |
| :---: | :---: | :---: |
| SG | odai a-r-a'ai? | odai a-m-a'ai? |
|  | go Y.N-1P-FUT | go Y.N-2\|3.IRR-FUT |
| DU | odai a-r-a'ai-du-ido? | odai a-m-a'ai-du-ido? |
|  | go Y.N-1P-FUT-IRR-DU | go Y.N-2\|3.IRR-FUT-IRR-DU |
| TRI | odai a-r-a'ai-bii-du-umo? | odai a-m-a'ai-bii-du-umo? |
|  | go Y.N-1P-FUT-TRI-IRR-PL.SBJ | go Y.N-2\|3.IRR-FUT-TRI-IRR-PL.SBJ |
|  | odau-bii a-r-a'ai-du-umo? | odau-bii a-m-a'ai-du-umo? |
|  | go-TRI Y.N-1P-FUT-IRR-PL.SBJ | go-TRI Y.N-2\|3.IRR-FUT-IRR-PL.SBJ |
| PL | odai a-r-a'ai-du-umo? | odai a-m-a'ai-du-umo? |
|  | go Y.N-1P-FUT-IRR-PL.SBJ | go Y.N-2\|3.IRR-FUT-IRR-PL.SBJ |

### 5.4 Near past tense

Comrie (1985:87) argues that when a language has degrees of remoteness in the past, the difference between today, and before today, is the most common distinction. This is the first of the degrees of remoteness in the past in Kope.

The near past is used for events which occurred earlier in the same day or during the previous night before the utterance was made. It is formed by the addition of -maa before $-k a$, which is obligatory in all forms. This is a shift from the present and future tense, where $-k a$ is only obligatory in the non-singular forms. Due to the obligatory nature of the combination of -maa and $-k a$, they have been glossed as a single morpheme -maaka, 'near past'.

Table 16. NEAR PASt PARADIGM OF $O D A U$ 'GO'

|  | $\mathbf{1 P}$ | $\mathbf{2 \| 3 \mathbf { P }}$ |
| :--- | :--- | :--- |
| SG | r-odau-maaka <br> 1P-go-NR.PST | odau-maaka <br> go-NR.PST |
| DU | r-odau-maaka-ido <br> 1P-go-NR.PST-DU | odau-maaka-ido <br> go-NR.PST-DU |
| TRI | r-odau-bii-maaka-umo <br> 1P-go-TRI-NR.PST-PL.SBJ | odau-bii-maaka-umo <br> go-TRI-NR.PST-PL.SBJ |
| PL | r-odau-maaka-umo <br> 1P-go-NR.PST-PL.SBJ | odau-maaka-umo <br> go-NR.PST-PL.SBJ |

The morpheme ta-, short for tauo, which marks the perfect (§6.5) is often used in conjunction with -maaka (12). However, it is not a necessary part of the tense marking system, as in (13)-(14), and can occur in the other past tenses. I believe ta'PF' is frequently used in the near past due to the very recent nature of the event, indicating it is quite likely to still have an effect on current events, and so requires the perfect.
(12) Do'ou duoduo-i, ara upi-bai'o-i raa-i
today morning-DET this women-group-DET fish-DET
ta-itai-maka-umo, ara dubu-i ta-ema'ai-maaka-umo.
PF-cook.one-NR.PST-PL.SBJ this man-DET PF-give-NR.PST-PL.SBJ
'This morning, these women already cooked a fish, and they gave it to this man.'
(13) Moo oobo-i rautu go'u r-odau-maaka-udo pooho-i

1 SG woman-DET with forage.fish $1 \mathrm{P}-\mathrm{go}-\mathrm{NR} . \mathrm{PST}-\mathrm{DU}$ net-DET
rautu.
with
'My wife and (lit. with my wife, we) (recently) went to fish with the net.'
(14) Do'ou duo-i, roupa 3-4 goro=ida, oo'u-maka, today night-DET maybe 3-4 region=LOC come-NR.PST титио-i тетiho hi'a, ририо титио-rо оо'и-maaka. earthquake-DET bad very, strong earthquake-NOM come-NR.PST 'This morning, maybe around three to four a.m., a very bad earthquake came, a strong earthquake came.'

The near past has the least consistent paradigm for questions, with the irrealis marking for singular and plural subjects both being unique to this tense. The occurrence of $-k a$ as a question marker in the near past complicates the analysis of the forms of $k a$ (see chapter 3), but testing with Kope speakers shows that in this tense, it occurs in parallel with question markers in other tenses, so here is functioning as marking irrealis in the near past. While using - $k a$ for questions in the near past was taught to me as the 'correct' way, (15)-(16), it is more common for the $-k a$ to be dropped and the present tense form of the question to be used, as in (17).

TABLE 17. NEAR PAST POLAR QUESTIONS FOR ODAU 'GO'

|  | $\mathbf{1 P}$ |  |
| :--- | :--- | :--- |
| SG | a-r-odau-ka? |  |
|  | Y.N-1P-go-NR.PST.IRR | a-m-odau-ka? |
| DU | a-r-odau-ka-ido? | Y.N-2\|3.IRR-go-NR.PST.IRR |
|  | Y.N-1P-go-NR.PST.IRR-DU | a-m-odau-ka-ido? |
| TRI | a-r-odau-bii-kaame? | Y.N-2\|3.IRR-go-NR.PST.IRR-DU |
|  | Y.N-1P-go-TRI-NR.PST.IRR.PL.SBJ | a-m-odau-bii-kaame? |
| PL | a-r-odau-kaame? | Y.N-IRR-go-TRI-NR.PST.IRR.PL.SBJ |
|  | Y.N-1P-go-NR.PST.IRR.PL.SBJ | Y.N-2\|3.IRR-go-NR.PST.IRR.PL.SBJ |

a. Ara duoduo-i ruи ra'u m-a'ai-ka? this morning-DET 3SG what 2|3.IRR-do-NR.PST.IRR
'What did she do this morning?'
b. Rии go'и odau-maaka.

3SG forage.fish go-NR.PST
'She went fishing/crabbing.'
(16) Bo'u r-ea'a-ka?
who.SG 1P-see-NR.PST.IRR
'Who did I see (recently)?'
(17) Roo do'ou duoduo bo'u m-ea'a?

2SG today morning who.SG 2|3.IRR-see
'Who did you see this morning?'
Near past is the only tense in which the portmanteau -kaame occurs as an irrealis plural marker (18). This is unique in that all other tenses use -umo for a plural subject, and this is the only place - ame occurs. While primarily used in questions, it can also be used for an irrealis statement (19), as is consistent with the parallel morphemes in other tenses. I have not heard $-k a$ used in a similar irrealis manner in the near past.
(18) a. Ara duoduo-i rii ra'u m-a'ai-kaame?
this morning-DET 3PL what 2|3.IRR-do-NR.PST.IRR.PL.SBJ
'This morning, what did they do?'
b. Rii go'u odau-maaka-umo.

3PL forage.fish go-NR.PST-PL.SBJ
'They went fishing (recently).'
(19) Om-oti-bu'a-umo, duu-i

CAUS-stand-small.amount-PL.SBJ food-DET
m-iito-kaame.
2|3.IRR-cook.many-NR.PST.IRR.PL.SBJ
'Wait a little while, they might already be cooking.' (t3:23)
While - kaame was taught to me as the 'correct' form, it is not regularly used, and may only be part of the upper Kope dialect. People mostly drop the irrealis suffix and rely on verbal prefixes and nominal suffixes to indicate that it is a question (21), (22). People can also use - kaumo, which is usually a declarative form, but here becomes a
variation on the irrealis -kaame, and in this context is an acceptable way to ask a question in the near past (20), (23).
(20) Ara duoduo-i rii go'u a-m-odau-ka-umo? this morning-DET 3PL forage.fish Y.N-2|3.IRR-go-NR.PST.IRR-PL.SBJ
'Did they go fishing this morning?'
(21) Ara duoduo-i rii go'u a-m-odau-umo?
this morning-DET 3PL forage.fish Y.N-2|3.IRR-go-PL.SBJ
'Did they go fishing this morning?'
In (22)-(23) the time is clear from the phrase do'ou duoduo 'this morning', and the irrealis nature of the sentence is clear from the use of $m$ - ' $2 \mid 3$.IRR'. The use of boi'o 'who-plural' and ra'u 'what' further clarify these as questions, even though (22) has no irrealis suffix and (23) uses $-k a$, which in the present or future tense is declarative.
(22) Ri'o do'ou duoduo boi'o m-i-ea'a-umo?

2PL today morning who.PL 2|3.IRR-PL.OBJ-see-PL.SBJ
'Who-PL did you-PL see this morning?'
(23) Ara duoduo-i ri'o ra'u m-a'ai-ka-umo? this morning-DET 2PL what 2|3.IRR-do-NR.PST.IRR-PL.SBJ
'What did you-PL do this morning?'

### 5.5 Intermediate past

Comrie (1985:87) states that in "languages with more distinctions in the past, a cutoff point between 'yesterday' and 'before yesterday' is common, but apparently only in conjunction with a cut-off point between 'today' and 'yesterday'." Kope matches this pattern in having distinctions between today (near past), yesterday (intermediate past) and before yesterday (distant past).

Intermediate past in Kope includes events which happened the previous day. There are a few unique things about this tense. When there is plural subject marking, the morpheme $-k a$ 'PRS', is replaced with - $d u$ 'INT.PST', which is also the morpheme used for questions about plural subjects in the future, present and intermediate past tense (Table 6). This means distinguishing declarative from irrealis in the intermediate past relies on the prefixes and context.

In example (24) r-ii-ho-du-umo means both (a) 'did we eat things?' and (b) 'we ate things'. The use of ra'u 'what' in (24)a indicates a question, while the use of tafor the perfect aspect in (24)b indicates an answer. In example (25) riihoduumo could be either a question or a statement, but from the flow of the narrative can be understood to be declarative, 'we ate things'.
a. Rimo tetuu ra'u r-ii-ho-du-umo?

1PL yesterday what 1P-PL.OBJ-eat-IRR-PL.SBJ
'What things did we eat yesterday?'
b. Rimo raa-i ta-r-ii-ho-du-umo.

1PL fish-DET PF-1P-PL.OBJ-eat-INT.PST-PL.SBJ
'We ate fish-PL (yesterday).'
(25) Ka emi'ei-tuti=ka, rimo duu-i re'ei=ida, duu-i CONJ sit.down-ITER=DECL 1PL food-DET place=LOC food-DET
r-ii-ho-du-umo.
1P-PL.OBJ-eat-INT.PST-PL.SBJ
'So we all sat down at the places where they had put our food (lit. food place), and we ate the food.' (t3:50)

TABLE 18. INTERMEDIATE PAST FOR ODAU 'GO’

|  | $\mathbf{1 P}$ | $\mathbf{2 P}$ | $\mathbf{3 P}$ |
| :--- | :--- | :--- | :--- |
| SG | r-odaau-die <br> 1P-go-INT.PST.SG | odaau-die <br> go-INT.PST.SG | odaau <br> go.INT.PST |
| DU | r-odau-du-ido <br> 1P-go-INT.PST-DU | odau-du-ido <br> go-INT.PST-DU | odau-du-ido <br> go-INT.PST-DU |
| TRI | r-odau-bii-du-umo <br> 1P-go-TRI-INT.PST-PL.SBJ | odau-bii-du-umo <br> go-TRI-INT.PST-PL.SBJ | odau-bii-du-umo <br> go-TRI-INT.PST-PL.SBJ |
| PL | r-odau-du-umo <br> 1P-go-INT.PST-PL.SBJ | odau-du-umo <br> go-INT.PST-PL.SBJ | odau-du-umo <br> go-INT.PST-PL.SBJ |

TABLE 19. Intermediate past polar questions for odau 'GO'

|  | $\mathbf{1 P}$ | $\mathbf{2 P}$ | $\mathbf{3 P}$ |
| :--- | :--- | :--- | :--- |
| SG | a-r-odau-die? | a-g-odau-die? | $a$-g-odau? |
|  | Y.N-1P-go- | Y.N-2\|3.IRR-go- | Y.N-2\|3.IRR-go |
|  | INT.PST.IRR.SG | INT.PST.IRR.SG |  |
| DU | a-r-odau-du-ido? | a-g-odau-du-ido? | $a$-g-odau-du-ido? |
|  | Y.N-1P-go-IRR-DU | Y.N-2\|3.IRR-go-IRR-DU | Y.N-2\|3.IRR-go-IRR-DU |
| TRI | a-r-odau-bii-du-umo? | a-g-odau-bii-du-umo? | $a$ a-g-odau-bii-du-umo? |
|  | Y.N-1P-go-TRI-IRR-PL.SBJ | Y.N-2\|3.IRR-go-TRI-IRR-PL.SBJ | Y.N-2\|3.IRR-go-TRI-IRR-PL.SBJ |
| PL | a-r-odau-du-umo? | $a-g-o d a u-d u-u m o ? ~$ | $a-g$-odau-du-umo? |
|  | Y.N-1P-go-IRR-PL.SBJ | Y.N-2\|3.IRR-go-IRR-PL.SBJ | Y.N-2\|3.IRR-go-IRR-PL.SBJ |

In most Kope verb paradigms, second and third person are identical, but in the intermediate past, 1 SG and 2 SG are marked with -die (26)-(27), whereas 3 SG is unmarked, appearing very similar to the present tense (28).
(26) Tetuu moo ai-r-odaau-die Goiravi-eito.
yesterday 1SG FOC-1P-do-INT.PST.SG Goiravi-GOAL
'Yesterday I went to Goiravi.'
(27) Roo raa-i itaai-die.

2SG fish-DET cook.one-INT.PST.SG
'You cooked a fish (yesterday).'
a. Ruи raa-i itaai.
3SG fish-DET cook.one 'She cooked a fish (yesterday).'
b. Ruи raa-i itai.
2SG fish-DET cook.one
'She is cooking a fish.'

The difference between the 3SG present and intermediate past is in vowel length. Which syllable lengthens is not consistent, and I have not been able to uncover a pattern that predicts where the length will be. Table 20 shows some of the patterns I have found.

Table 20. Vowel length in present and intermediate past

| PRESENT | INTERMEDIATE PAST |
| :--- | :--- |
| go'u oda $u$ <br> '3SG goes fishing' | go'u odaa $u$ <br> '3SG went fishing (yesterday)' |
| emidio <br> '3SG remains' | emiidio <br> '3SG remained (yesterday)' |
| ema'ai <br> '3SG gives to one person' | ema'aai <br> '3SG gave to one person (yesterday)' |
| ima'ai <br> '3sG gives to many people' | ima'aai <br> '3SG gave to many people (yesterday)' |
| itai <br> '3SG cooks one thing' | itaai <br> ''3SG cooked one thing (yesterday)' |
| ito <br> '3SG cooks many things' | iito <br> ''3SG cooked many things (yesterday)' |

An irrealis context that is not a question can also be marked with - die, as is explained in $\S 8.3$, and shown in example (29).
(29) $O b o=i d a$ ito-i, ai-m-iito-die.
water=INST cook-? FOC-2|3.IRR-cook.many-IRR
'Cook with water, you should cook them.'
In the intermediate past and distant past, prefixes for questions in the second and third person have a different pattern to the near past, present and future. The first person prefixes are consistent across tenses. In the $2 \mid 3 \mathrm{P}$ intermediate and distant past, the person marking prefix is $g$-. This occurs as $a g$ - in polar questions (30), and is dropped in content questions (31). See $\S 4.2 .2$ and 7.3 for further details.
(30)
a. Tetuи ri'o go'u a-g-odaau-du-umo?
yesterday 2PL forage.fish Y.N-2|3.IRR-go-IRR-PL.SBJ
'Yesterday, did you-PL go fishing?'
b. Ri'o go'u a-m-odau-du-umo?

2PL forage.fish Y.N-2|3.IRR-go-IRR-PL.SBJ
'Are you-PL going fishing?'
(31) a. Tetuu ri'o ra'u a'ai-du-umo?
yesterday 2 PL what do-IRR-PL.SBJ
'What did you-PL do yesterday?'
b. Ri'o ra'u m-a'ai-du-umo?

2PL what $2 \mid 3$.IRR-do-IRR-PL.SBJ
'What are you-PL doing?'

### 5.6 Distant past

Distant past covers all events prior to yesterday and consistently uses the morpheme $p$ - (33). I have not tested the line between intermediate past and distant past. I expect that it follows the same line as between near past and intermediate past.

This morpheme $p$ - precedes all morphemes except those for obligation ( $m a-$ ) and focus (ai-, aia, aiha, ha). It uses the same subject markers as other tenses, but these are directly attached to the root, without the $-k a /-d u$ of some other tenses. Before the first person marker $r_{-}, p$ - becomes pi- to maintain the Kope CV syllable structure (32).
(32) Aiha pi-r-ema'ai-mo.
therefore D.PST-1P-give-PL.SBJ
'Therefore we gave it to him.'
(33) Gamo'o hi'a-ha p-ema'ai pai-dubu-i eito ibuo-i.
straight very-FOC D.PST-give chief-man-DET GOAL axe-DET
'He gave the axe directly (lit. very straight) to the chief.'

TABLE 21. DISTANT PAST OF $O D A U$ ' $G O$ '

|  | $\mathbf{1 P}$ | $\mathbf{2 \| 3 P}$ |
| :--- | :--- | :--- |
| SG | $\boldsymbol{p i}$-r-odau <br> D.PST-1P-go | p-odau <br> D.PST-go |
| DU | $\boldsymbol{p i}$-r-odai-do <br> D.PST-1P-go-DU | $\boldsymbol{p}$-odai-do <br> D.PST-go-DU |
| TRI | pi-r-odau-bii-mo <br> D.PST-1P-go-TRI-PL.SBJ | $\boldsymbol{p}$-odau-bii-mo <br> D.PST-go-TRI-PL.SBJ |
| PL | pi-r-odau-mo <br> D.PST-1P-go-PL.SBJ | p-odau-mo <br> D.PST-go-PL.SBJ |

Questions follow the same pattern as the intermediate past, with polar questions being marked by $a g$ - and content questions having no prefix (34)-(35).
(34) Tehata bo'u-ro booro oorio?
before.yesterday who.sg-NOM ball play
'Before, who played ball?'
(35) Tehata ara meree-i booro a-g-oorio? before.yesterday this person-DET ball Y.N-2|3.IRR-play
'Before, did this person play ball?'
TABLE 22. DISTANT PAST QUESTIONS FOR ODAU 'GO'

|  | $\mathbf{1 P}$ | $\mathbf{2 \| 3 P}$ |
| :--- | :--- | :--- |
| SG | $\boldsymbol{a}$-r-odau? | $\boldsymbol{a}$-g-odau? |
| DU | $\boldsymbol{a}$-r-odai-do? | $\boldsymbol{a}$-g-odai-do? |
| TRI | $\boldsymbol{a}$-r-odau-bii-mo? | $\boldsymbol{a}$-g-odau-bii-mo? |
| PL | $\boldsymbol{a}$-r-odau-mo? | $\boldsymbol{a}$-g-odau-mo? |

### 5.7 Secondary past tense

In subordinate and secondary clauses (see §3.3.4), Kope has a different past tense marking system that uses $i-$, rather than distinguishing between the three primary past tenses (§5.4-5.6). Instead, $i$ - is a single past tense that covers everything before the moment of speech. For TAM markers to be expressed differently on dependent and
independent clauses is not unique, with a reduced number of tense distinctions being a feature of clause de-ranking in a number of languages (Cristofaro 2003:54-74).

Clifton (1995:56) argues for $i$ - as a plural absolutive marker. There are several homophonous $i$ - morphemes in Kope, including the secondary past tense marker. As this morpheme occurs on both transitive and intransitive verbs, with both single and plural subjects, it is not a plural absolutive marker. The case for it being a secondary past tense, and not a plural absolutive marker, will be argued later in this section.

Brown (2009:24, 26) refers to this $i$ - morpheme in Urama as marking backgrounded information. Brown et al. (2016a:70) recognise that in Urama "the $i$ prefixed to verbs in relative clauses appears to be tense marking for the intermediate and distant past, as well as for the near past."

The secondary past tense $i$ - does not usually delete a following vowel, which helps to distinguish it from the $i$ - for plural marking, where vowel deletion does occur.

In example (36) the contrast of $i$ - for past tense in the temporal clause contrasts with the use of $p$ - for distant past in the main clause. That the $i$ - is not used in a future tense temporal clause is evident in example (37), where the future auxiliary is used in the secondary clause as well as the main clause. Example (38) shows the lack of $i$ - in the present tense.
(36) Tehata himio-i i-oti $=d a$, rii ai-p-odau-mo, before.yesterday sun-DET PST-stand=LOC 3PL FOC-D.PST-go-PL.SBJ pa'ea-i eito. garden-DET GOAL
'Before when it was sunny (lit. the sun stood), they went to the garden.'
(37) Toutu himio oti a'ai=da, rii odai-'ai-ka-umo, pa'ea-i Tomorrow sun stand FUT=LOC 3PL go-FUT-PRES-PL.SBJ garden-DET eito.
GOAL
'Tomorrow when it is sunny (lit. the sun will stand), they will go to the garden.'
(38) Ruu odai=da, gabo-i ipi=da, meree-ohio ata emee'a. 3SG go=LOC path-DET middle-LOC person-boy other see
'While going, in the middle of the path, he sees another boy.'
In example (39), where the blessing is given to a singular recipient, $i$ - is added to ema'ai 'give' to mark past tense in a subordinate clause. Clausal considerations are also why the first person $r$ - is not used. The distant past, which is used earlier in the example for piridiaimo 'we went up from the river' indicates the time frame of the event. Example (40) shows the secondary past tense being used in a relative clause.
(39) Hie=ida pi-r-idiai-mo re'ei moto=ida,
then=LOC D.PST-1P-go.away.from.river-PL.SBJ place house=LOC
moto- $i \quad$ erara-i i-ema'ai-umo.
house-DET blessing.strength-DET PST-give-PL.SBJ
'Then we went up to the house place, (where) we blessed the house (lit. we gave the house a blessing).'
(40) Areru-i-ro i-ema'ai paira-i=ka...
angel-DET-NOM PST-give name-DET=DECL
'The name the angel had given him...' (Lk 2:21)
Example (41) demonstrates $i$ - being used for past tense for a single subject on an intransitive verb, while example (42) has $i$ - used for a single subject of the derived transitive verb or-ododiai 'happen to s.o.' This shows that past tense $i$ - differs from the plural marker $i-$, and is not a plural absolutive marker.
(41) I-ohu'odi-dio=ida...

PST-rush.out-PROG=LOC
'When that person was rushing out...' Gabo (2017:12)
(42) Ara odii i-or-ododiai himio-i, moo meree keehi=ka. this story PST-MID-happen day-DET 1 SG person small=DECL
'At the time (lit. day) this story happened to me, I was a small child.'
It is likely that this past tense $i$ - has been described as marking the plural absolutive, as it often occurs on intransitive verbs. Kope speakers and writers use it the majority of the time in non-main clauses, but not in every situation. There seems to be a higher likelihood, but no guarantee, that it will be used on sentences with plural subjects or
with plural objects, leading to the confusion with a possible plural absolutive. At the time of writing my dissertation, this suggested further research to understand how often this form is used, and why it is not used in every situation. In example (43), $i$ $o$ 'uo- $i=k a$ 'we went (down the steps)' apparently uses the $i$ - for (absolutive) plural or past or both, but in example (44), the same speaker says oo' $u i=k a$ for 'we came' without the prefix $i$-, even though both are referring to an event on the same day, with the same group of people.
(43) Rimo i-o'uo-i=ka; rimo r-odau-du-umo moto-i.

1PL PST-get.down-?=DEC 1PL 1P-go-INT.PST-PL.SBJ house-DET
'We went down (the steps of the hall). We went to the house.' (t3:22)
(44) Rimo oo' $u-i=k a$ moto- $i$.

1PL come-?-DECL house-DET
'We came to the house.' ( $\mathrm{t}: 62$ )
In subsequent discourse research, Petterson (this volume chapter 12) finds that verbs ending in $-i=k a$ may take a plural prefix, but never take a past tense prefix, and that a small set of verbs, including oo' $u$ 'come' never take the (absolutive) plural prefix. These claims may help to explain the paradox.

When discussing the use of $i$ - in text 3 (the visit to Bavi), I asked about $i$-odoi=ka 'we went down' in example (45) and was told that if only one person had gone down, it would have been odoi=ka 'I went down.' At the time of writing, this suggested a plural aspect to the $i$ - past tense marking, but as it is used for singular subjects on intransitive verbs in other places, as in (41) and (46), the plural absolutive description did not seem to hold. Petterson (this volume chapter 12) confirms that $i$ - in the first verb of (45) indeed marks a plural, which is used when the subjects are acting one by one (as when they are walking rather than grouped together in a canoe). On the other hand, in the third verb of (45), i-ra'i-du-umo, and the first verb of (46) it acts as a past tense marking.
(45) Ata bero-i aa'o-i=ka, rimo i-odai=ka, gido gido another bell-DET spoke-?=DECL 1PL PL.MID-go=DECL song $\sim$ RDUP om-ahoro-i=ka; gido~gido i-r-a'ai-du-umo or-opoi'o-i. CAUS-start-?=DECL song~RDUP PST-MID-do-INT.PST-PL.SBJ MID-finish-?
'The bell rang again, and we walked down, and the singing started. We were singing until it finished.' (t3:17)
(46) Kiauka, moo abea-i i-oo'u=ida, moo ru'a kere=ida okay 1SG father-DET PST-come $=$ LOC 1 SG tree piece $=$ INST aiha pi-r-ai'ia.
therefore D.PST-1P-hit
'Okay, when my father came, he therefore hit me with a stick (lit. tree piece).'

Further options for what may be the plural absolutive are investigated in §9.4.

## 6. Aspect

Aspect describes the internal organisation of an event in time, with the basic distinction being between the perfective and imperfective (Kroeger 2005: 152-157). "The perfective looks at the situation from the outside, without necessarily distinguishing any of the internal structure of the situation, whereas the imperfective looks at the situation from the inside" (Comrie 1976:4).

Kope has numerous suffixes to mark imperfective aspect, including -dio for both progressive and habitual aspect, and $-u t i$ and $-t u t i$ for different kinds of iterative aspect. These are suffixes to the verb root, and remain on the root when the future auxiliary is added. The perfect is a particle tauo that can be shortened to a clitic on the verb, or used as a separate word.

There is also potential lexical aspect indicated by the type of vowel that ends a verb root (§6.1).

### 6.1 Lexical aspect: continuative and punctiliar

Ray (1933:29) noted a difference between the aspect of verbs ending in non-low vowels ( $e, i, o, u$ ), and those ending in $a$ and $a i$ in Southern Kiwai. Foley (1986:147148) continues this theory calling the non-low endings continuative and the low endings punctiliar. Brown (2009:17-18) and Brown et al. (2016a: 37-38) both consider this a part of Urama verb structure, but claim that the distinction is not as strong as in Southern Kiwai. In Kope, there is limited evidence to support this theory, and enough exceptions to give reason to question the idea.

By Ray's theory (Ray 1933), verbs ending in $a$ and $a i$ are lexically punctiliar. While erehe'eai 'turn yourself around,' oa'eemia 'turn over,' and ai'ia 'hit' fit this pattern, ea'a 'see' and and aupai 'swell' do not.

Ray's theory also means that verbs ending in $e, i, o$, and $u$ should be durative in meaning. Orobu 'sleep, lie', ii'ii 'grow, become', ohu'o 'go downstream,' obobo 'dig,' aabu 'go across' and emaate 'pour/serve' from aate 'fill' all fit that pattern. Some of the verbs that do not fit the pattern are ari'i 'scratch once,' iodo 'split
something,' oroi'io 'finish,' and ahimodi 'touch briefly.' Oti 'stand' is somewhere in between, having both punctiliar 'she stood up' and durative 'she is standing' uses. As oti 'stand' is often used for houses and trees 'standing,' the primary meaning would be durative.

Kope has similar verbs to those presented by Brown et al. (2016a) in Urama. With these verbs there is a change in the final vowel of the verb root that is not explained by verbal morphology, but could possibly be explained with Ray's theory. These verbs show an alternation that is related to a punctiliar action becoming iterative because of multiple objects, and thus having a more durative sense. This includes ikeduai, to 'throw out many things at once', and ikeduo, to 'throw out many things, one by one', and ahiai 'cut one' and iahio 'cut many.'

While the pattern of the final vowel on verb roots being non-low for continuative aspect and low for punctiliar aspect holds for some verbs in Kope, it is not a strong distinction. Lexical aspect will not be discussed further in this paper.

### 6.2 Imperfective: progressive

Progressive aspect describes "an event in progress or a continuing situation" (Kroeger 2005:348). In Kope, the progressive is marked with -dio. While this can be added to a range of verbs, there are some verbs in which it has been lexicalised. On these verbs, it is evident that there was originally a root plus the progressive morpheme -dio, but now it is a unique lexical entry. In some cases (1) the meaning of the original root still exists, but in others such as odudio 'float' it is unclear.

Example (1)c is the most common example of the progressive morpheme -dio being lexicalised. I had been familiar with the instruction emi'ei 'sit' and the description emidio 'sitting, remaining' for a few years before I became aware that there was another root ei'ei which these two verb forms may have been built on. This was during the translation of (2).
a. $e i ' e i$
b. emi'ei!
ei'ei
em-ei'ei
c. emidio
sit
BEN-sit
em-ei'ei-dio
,
'sit' 'sit yourself down!'
BEN-sit-PROG
'remaining, sitting, staying'

```
(2) Maria, Pai-dubu-i hoohoo re'ei-ha-ato p-ei'ei.
Maria chief-man-DET face place-FOC-LOC D.PST-sit
'Maria sat in front of the Lord.' (Lk 10:39)
```

The progressive aspect is demonstrated in the two examples below, where the verb o'apua 'take hold of' in (3) is contrasted with o'apud-io 'keeping hold of' in (4).
(3) Ruи i-orobu tioipi o'apua- $i=k a$, odai moto- $i$ 3SG PST-sleep/lie sleeping.mat take.hold-?=DECL go house-DET eito.
GOAL
'He took hold of his sleeping mat, and went to his house.' (Lk 5:25)
(4) Ruи ru'a hura-i itode kuku-i tu=ida ai-o’apu-dio. 3SG tree seed-DET sort stick-DET hand=INST FOC-take.hold-PROG
'He is holding the seed-sorting stick in his hand.' (Lk 3:17)
A word that is most often used with progressive aspect is oromidio 'listening, hearing'. It appears to be derived from oromai 'hear' (5), but since the derived forms are both oromidio and omidio, as in (6), this suggests that or- might be the middle voice prefix (see 9.3), and that the original root is possibly *omai.
(5) Rimo-ro tutue-i oromai=ka.

1PL-NOM conch.shell-DET hear=DECL
'We heard the conch shell.'
(6) Rimo i-r-om-oti-du-umo, rii-ro aa'o-i=ka, "Okay, 1PL PL-MID-CAUS-stand-INT.PST-PL.SBJ 3PL-NOM say-?=DECL Okay
boubou-i ita or-omi-dio-umo, ri'o
thanksgiving.gift-DET must MID-hear-PROG-PL.SBJ 2.PL
$i$-m-i-de'a-umo mori namba-i tauo
PL.BEN-BEN-PL.OBJ-put-PL.SBJ money number-DET PF
$r$-omi-dio-umo."
1P-hear-PROG-PL.SBJ
'As we were waiting, they said, "Okay, listen to the (amount of the)
thanksgiving gift, listen to the money that you people gave."' (t3:52)

An unexpected case of lexicalisation of the progressive aspect is abidio 'to paddle' (7), which appears to be formed from the noun aibi 'oar, paddle' and -dio 'progressive'. Paddling could be considered both an iterative action as well as a continuing one.
(7) Meree-hio-i geega-ro abidio, aibi=da. person-boy-DET big-NOM paddle.V paddle.N=INST
'The big boy is paddling, with a paddle.'

### 6.3 Imperfective: habitual

The habitual aspect is "characteristic of a certain period of time" (Kroeger 2005:345). In Kope the habitual aspect has the same form as the progressive aspect, -dio (8). As the two can occur together, as in (9), I have listed them as separate morphemes.
(8)
a. Do'ou rii kamara-i ii-ho-ka-umo. today 3PL sweet.potato-DET PL.OBJ-eat-PRS-PL.SBJ
'Now they are eating sweet potato.'
b. Turiaha himio-i rii kamara-i
all day-DET 3PL sweet.potato-DET
ii-ho-dio-ka-umo.
PL.OBJ-eat-HAB-PS-PL.SBJ
'Every day they eat sweet potato.'
(9)
a. Roo moto=ida a-m-emidio-dio, turiaha 2SG house=LOC Y.N-2|3.IRR-remaining-HAB all
himio?
day
'Do you stay in the house every day?'
b. Ie, moo moto=ida r-emidio-dio.
yes 1SG house=LOC 1P-remaining-HAB
'Yes, I am always staying in my house.'
c. A'a, moo moto=ida emidio-dio bia.
no 1 SG house $=$ LOC remaining-HAB NEG
'No, I am not always staying in my house.'

While the line between progressive and habitual aspect is not clear, context dictates which aspect is being used. In (10), the phrase turiaha himioi 'every day' indicates the habitual aspect of the second clause, showing that ototo 'beat' has a lexical meaning that is progressive.
(10) Do'ou rii duu-i ototo-ka-umo, turiaha himio-i duu-i today 3PL sago-DET beat.ITER-PRS-PL.SBJ all day-DET sago-DET oto-dio-ka-umo.
beat-HAB-PRS-PL.SBJ
'Today they are beating sago, every day they beat sago.'
Example (11) shows omo'omai 'hug' with both a singular progressive -dio, and a double -diodio for progressive and habitual.
(11) Hiiro himio, moo rio=ka, ri'o turiaha, moo tamu=ida many day 1 SG want=DECL 2PL all 1 SG wing=INST ma-r-i-mo'oma-ti-dio, kokoro mamu-i-ro, kokoro PURP-1P-PL.OBJ-hug-ITER-PROG hen mother-DET-NOM hen
kee~ke-i i-mo'oma-ti-dio-dio emera-i, ruи tamu-i small~RDUP-DET PL.OBJ-hug-ITER-PROG-HAB path-DET 3SG wing-DET goro=ida.
under $=$ LOC
'Many times (lit. days), I have wanted to be hugging you all with my wings, the way a mother hen is always hugging her small ones under her wings.' (Lk 13:34)

### 6.4 Imperfective: iterative and distributive

Kope has two iterative aspect markers. The first form, -uti 'iterative', marks an action that is repeated various times on similar objects, in a shorter time frame. The second, -tuti 'distributive,' is repeated over a larger distribution of time, space, or objects. The distributive feature does not seem to be a common part of the aspectual distinction of languages, although there can be distributive features to the number systems of some languages (Dixon 2012:50-51).

In examples (12) and (13) the progression of the repetition and the addition of -uti can be traced as the fish are given to multiple people in a repeated manner, multiple canoes are carved, and multiple trees are chopped down.
(12) a. Ara dubu-i-ro ara uubi gaa'ubuo raa-i this man-DET-NOM this people one fish-DET $i$-ma'ai.
PL.BEN-give
'This man is giving these people a fish.'
b. Ara dubu-i-ro ara uubi gaa'u~gaa'u raa-i this man-DET-NOM this people one $\sim$ RDUP fish-DET $i$-ma'a-ti.
PL.BEN-give-ITER
'This man is giving these people a fish each.'
(13)
a. Ara dubu-i ru'a-i e'ebo, pee-i
this man-DET tree-DET cut canoe-DET
ma-o'o-iri.
OBLG-carve-PURP
'This man is cutting one tree so that he can carve a canoe.'
b. Ara dubu-i ru'a-i e'ebo, hiiro pee-i
this man-DET tree-DET cut many canoe-DET
ma-i-o'-uti-ri.
OBLG-PL.OBJ-carve-ITER-PURP
'This man is cutting one tree so that he can make many canoes.'
c. Ara dubu-i hiiro ru'a-i i-’eb-uti, hiiro
this man-DET many tree-DET PL.OBJ-cut-ITER many
pee-i ma-i-o'-uti-ri.
canoe-DET OBLG-PL.OBJ-carve-ITER-PURP
'This man is cutting many trees so that he can make many canoes.'
When discussing Luke 10:2, example (14), I was told that iaa'ubo meant pulling out one kind of thing many times, but that iaau'buti is pulling up a range of things of different kinds.
(14) Ra-i i-aa'ubo uubi reto'a-ti=ka.
thing-DET PL.OBJ-pull.harvest people two-DU=DECL
‘There are only a few harvesting people.' (Lk 10:2)

Another example concerns the verb oadu'o 'tell'. In examples (15)-(16) it is used to denote a single message, given by a group (15) or by a single subject (16).
(15) Simiora emapua-maamu-i erara~erara gimo p-a'ai, ka Simon in.law-mother-DET hot $\sim$ RDUP sick D.PST-do CONJ
rii-ro, ruu Iesu-i-do oadu'o-umo-i=ka.
3PL-NOM 3SG Jesus-det-GOAL tell-PL.SBJ-?=DECL
'Simon's mother-in-law had a fever and they told Jesus about her.' (Lk 4:38)
(16) TB made-i oadu'o-i Karati-ato.
tuberculosis word-DET tell-? Karati-LOC
'She is telling a message about TB, at Karati.'
Common derivations of oadu'o 'tell' are or-oadu'o, 'tell' in the middle voice (17), om-oadu'o 'tell for the benefit of someone' (18), and or-oadu'-uti ~ om-oadu'-uti 'keep telling, tell many things' (19)-(20). It does not seem possible for -uti to be used on oadu' $o$ without either or- or om- also being prefixed. This is not the case with all words using the iterative.
(17) Moo himia odii or-oadu'o-i r-a'ai. 1SG self story MID-tell-? 1P-FUT 'I will tell my story.'
(18) Meree ata om-oadu'o-'a.
person other BEN-tell-NEG
'Do not tell another person.'
(19) Ai-r-emidio-du-umo, ka odii FOC-1P-remain-INT.PST-PL.SBJ CONJ story
r-or-oadu'-uti-du-umo.
1P-MID-tell-ITER-INT.PST.PL.SBJ
'We sat and we told stories (yesterday).'
(20) Iesu emi'ei=ka pee-i rio=ida, ka uubi hiiro-i Jesus sat=DECL canoe-DET inside=LOC CONJ people many-DET $p-i-m-\boldsymbol{o a d u}$ '-uti. D.PST-PL.BEN-BEN-tell-ITER
'Jesus sat in the canoe and told things to many people.' (Lk 5:3)
The iterative is marked on verbs in secondary and subordinate clauses, but person marking is not present. In (21) there is tense and person marking on both p-odau-umo 'they went' and i-emidio-umo 'they stayed', but not on the iterative form i-mo-adu'uti 'they told'.
(21) Rii hioito p-odau-umo go'oto-i-re ka-mia

3PL quickly D.PST-go-PL.SBJ village-DET-CONJ CONJ-CONJ
geema~eema pa'ea-i-re-i, i-emidio-umo uubi
big RDUP garden-DET-CONJ-DET PST-remain-PL.SBJ people
i-m-oadu'-uti.
PL.BEN-BEN-tell-ITER
'They quickly went to the towns and the big gardens (farms) and to tell the people who stayed there.' ( $\mathrm{Lk} 8: 34$ )

Although morphophonemics make several changes to the surface form, the same root oadu'o 'tell' is used in example (22) with the distributive, -tuti, to indicate that there were numerous conversations between numerous people saying a similar thing. I am not sure why -tuti is used here, but not in the similar situation of (21).
(22) Uubi urio podaudiomo, ka rii himia-ro
uubi urio p-odau-dio-umo ka rii himia-ro
people spirit D.PST-go-PROG-PL.SBJ CONJ 3PL self-NOM
ai-porodu'aitutimo...
ai-p-or-oadu'o-tuti-umo
FOC-D.PST-1P-MID-tell-DIST-PL.SBJ
'The people were amazed (lit. their spirit ran away), and they said among themselves...' (Lk 4:36)

Distributive -tuti is normally used to mark the repetition of a single action by multiple people (22)-(25). When an action is distributed over time, -tuti can also be used (26).
(23) Rimo r-odau-du-umo emi'ei-tuti=ka.

1PL 1P-go-INT.PST-PL.SBJ sit-DIST=DECL
'We came, we each sat down.'
(24) Rimo ge'ii raahoa'ei i-abo-tuti=ida...

1PL happy song PL.OBJ-sing-DIST=LOC
'When we sang many happy songs...' (Lk 7:32)
(25) Memiho urio-i hiiro uubi-ato
evil spirit-DET many people-LOC
p-i-ohu'o-tuti-mo.
D.PST-PL.OBJ-come.out-DIST-PL.SBJ
'Many evil spirits came out of many people.' (Lk 4:41)
(26) Ka ruu-ro ai-p-emabibai-tuti, Iesu ma-emee'a-iri. CONJ 3SG-NOM FOC-D.PST-attempt-DIST Jesus OBLG-see-PURP
'And he (Herod) kept trying to see Jesus.' (Lk 9:9)
The iterative -uti is used for repeated actions, and distributive -tuti for actions repeated over time, space, or objects. Of all the verbal suffixes, these two occur closest to the verb root. They can be followed first by the progressive aspect -dio, and then by the habitual aspect, the homophonous -dio.
(27) Duo=ida r-orobu-ti-dio.
night=LOC 1P-sleep/lie-ITER-HAB
'When it is night, I sleep (habitually).'
It is possible for both iterative or distributive and habitual to be marked, as in example (11) in §6.3.

### 6.5 Perfect

Kroeger (2005:158) distinguishes perfective aspect from perfect, saying that perfective "refers to the event as an entire whole", while perfect "is used to express a past event which is relevant to the present situation."

Kope marks perfect through the verbal particle tauo, as in (28)-(29). This can stand alone as a word, but is regularly shortened to $t a=$ in both speech and writing (30)-(31). In the translation of the gospel of Luke, which is a more formal text, tauo
is always used, as in (32), not $t a=$, since tauo is considered to be the 'correct' form. When translating Kope to English, speakers regularly gloss tauo as 'already.'

As mentioned in $\S 5.4$, tauo is often used in the near past to emphasise the completion of an event and its impact on current events. This is similar to Comrie's (1985:85) description of the two uses of the perfect in Spanish, as both having current relevance, or having taken place earlier today.
(28) Pai-dubu ihaha tauo eibua-maaka! chief-man truly PF get.up-NR.PST
'The Lord is already risen!'
(29) Uubi hi'a hi'o tauo pi-r-uuho, Bavi uubi iaraa boho=ida people very flesh PF D.PST-1P-eat Bavi people last war=LOC gaa'ubuo ee'ee p-ai'ia-mo. one person.to.eat D.PST-hit.to.kill-PL.SBJ
(when this story happened) 'I had already eaten the very flesh of a human, when at the last war, the Bavi people had killed one (by hitting him).'
(30) Do'ou duoduo-i, rimo raa gaa'u-i ta-r-itaai-maaka-umo, today mornig-DET 1PL fish one-DET PF-1P-cook.sg-NR.PST-PL.SBJ dubu-boi'o-i ta-r-i-ma'a-ti-maaka-umo. man-group-DET PF-1P-PL.BEN-give-ITER-NR.PST-PL.SBJ
'This morning we already cooked a fish and gave it (in pieces) to each of the men.'
(31) Rii moto=ida ta-p-emidio-umo.

3PL house=LOC PF-D.PST-remain-PL.SBJ
'They had stayed in the house.'
(32) Tauo ha-p-i'ati, Iehoma himo-gabo-dubu-i Aisaia PF FOC-D.PST-write God dream-path-man-DET Isaiah buka=ida... book=LOC
'It is already written in the book of the prophet (lit. God's dream path man) Isaiah...' (Lk 3:4)

The perfect particle tauo is usually used immediately prior to the verb, but it can also be moved to the front of a clause to emphasise the current significance of a completed event, (33), and is used in verbless clauses (34).
(33) ...mabu tauo-i himo-gabo-uubi, rii-ro
because PF-? dream-path-people 3PL-NOM
$i$-i-moto-umo $=i$ iri...
PST-PL.OBJ-kill-PL.SBJ=PURP
'...because they have already killed the prophets (lit. dream path people)...
' (Lk 11:50)
(34) Tauo-i mea hi'a=ka.

PF-? good very=DECL
'It is already very good.'
Tauo has a homophone that means 'wait' (35).
(35) Taиo moo abea-i u'uma-i r-ar-aimai.
wait 1SG father-DET bury-? 1P-MID-return
'Wait for me to bury my father and return.' (Lk 9:59)
This can also be used as an interjection, 'Tauo! Tauo!' 'Wait! Wait!' when someone is disagreeing with a statement and wanting others to hear their opinion.

### 6.6 Inceptive

Kroeger (2005:157) defines inceptive aspect as "the beginning of a situation (e.g. about to $X$, on the point of $X$-ing). The term inchoative is sometimes used in the same way, but more often this term refers to a change of state or entering a state (to become $X$ )." Based on this definition, Kope has an inceptive form tootoo which native speakers gloss as 'trying', but which refers to actions on the verge of happening. Rather than being a grammatical morpheme, tootoo is a particle that is part of larger construction:

$$
\text { Inceptive aspect }=\text { root }+ \text { tootoo }+a^{\prime} a i{ }^{\prime}{ }^{\prime} \mathrm{do}^{\prime}
$$

All derivational morphology remains on the verbal root, while inflectional morphology is on the auxiliary $a$ ' $a i^{\prime}$ 'do' as can be seen in (36)-(38).
(36) Ihiai tootoo p-a'ai.
die INC D.PST-do
'She was about to die.' (Lk 8:33)
(37) Ruu-ro go'ota-i i-ari'i-ti tootoo a'ai. 2SG-NOM coconut-DET PL.OBJ-scratch-ITER INC do
'He is about to scrape (repeatedly scratch) coconuts.'
(38) Odau tootoo pi-r-a'ai-mo.
go INC D.PST-1P-do-PL.SBJ
'We were about to go. / We were trying to go.'

## 7. Mood

Following the model of Kroeger (2005:347), who defines mood as the "grammatical reflection of the speaker's purpose" and divides it into three major moods (declarative, interrogative and imperative), this chapter examines how these three moods are expressed in Kope.

Mood co-occurs with the tense marking system in Kope, with the declarative and interrogative moods having alternate morphemes that occur in the same position in most tenses. As the interrogative form is also used to mark non-declarative forms, such as instructions and possibilities, the morphemes have been labelled as irrealis rather than interrogative. The result is irrealis morphemes used in the formation of interrogative words. Table 6 in $\S 3.2$ shows the pattern of declarative and interrogative words.

This chapter will cover positive and negative declaratives, positive and negative imperatives and finish with a discussion of interrogatives.

### 7.1 Declarative

Positive and negative declarations in Kope take different forms, so have been described separately. Negative declarations have less marking than positive declarations.

### 7.1.1 Positive statements

Declarative mood is closely connected with tense marking in Kope. Chapter 5 details how the declarative and interrogative forms work in each tense, as does Table 6 in §3.2. Knowing which tense is being used is important, as there are some homophonous morphemes that could be either declarative or irrealis, depending on the tense. The larger context will indicate the tense, which in turn defines which meaning the morpheme is indicating. One such homophone is $-d u$, which is irrealis in the future, present and intermediate past, but is also declarative in the intermediate past. This contrast can be seen in (1)-(2).
(1)
a. Rii-ti $\quad$ a-m-ototo-du-ido?
3PL-DU Y.N-2|3.IRR-beat-IRR-DU
b. Rii-ti ototo-ka-ido.
3PL-DU beat-PRS-DU
'They (2) are beating sago.'
(2) Tetu duи-i ototo-du-umo.
yesterday sago-DET beat-INT.PST-PL
'Yesterday they beat sago.'
As discussed in chapter 3, $k a$ has several homophones. This includes the inflectional suffix that is a declarative in the present, future and near past, as in (1)b. It is also part of the suffix -kaame, which indicates irrealis in the near past, as is seen in (3).
(3) Ri'o moto=ida a-m-emidio-kaame?

2PL house=LOC Y.N-2|3.IRR-remain-NR.PST.PL.SBJ.IRR
R-emidio-maaka-umo.
1P-remain-NR.PST-PL.SBJ
'Did you-PL stay at the house? We stayed.'
For further examples, see $\S 5.4$, especially Table 18 and examples (15) and (16).
The clitic $=k a$ also has a declarative function (see §3.3.1) with a parallel interrogative form $=r a$ (see §7.3). This declarative function of $=k a$ holds for both verbless clauses (4)-(5) and secondary clauses (6).
(4) Taraka-i aromo tama=ka.
truck-DET sky skin=DECL
'The truck is blue (lit. sky skin).'
(5) Ka do'oi beibi oтe gaa'u=ka, rии ририо beibi=ka. CONJ today baby moon one=DECL 3 SG strong baby=DECL
'And now (my) baby is one month old, he is a strong baby.'
(6) Didimo=ida rimo ii-ho- $\mathbf{i}=\boldsymbol{k} \boldsymbol{a}$.
after=LOC 1PL PL.OBJ-eat-?=DECL
'Afterwards, we ate.'

### 7.1.2 Negative declaratives

Negative declaratives are marked with bia ' NEG ', and do not use the full primary tense marking system, as can be seen in the comparison of (7) with (8) and (9). In the future tense the auxiliary $a$ 'ai is used, but person marking is optional.
(7) Ri'o odoro-i a'ai bia.

2PL go.upstream-? FUT NEG
'You-PL will not go back upstream.'
(8) Ri'o odoro-i a'ai-ka-umo...

2PL go.upstream-? FUT-PRS-PL
'You-PL will go back upstream...'
(9) Rimo raa-i obo bia-ra, raa-i ii-ho-i r-a'ai bia.

1PL fish-DET catch NEG-Q fish-DET PL.OBJ-eat-? 1P-FUT NEG
'If we do not catch fish, we will not eat fish.'
Because of this reduced marking, the time of the statement in non-future tenses needs to be taken from temporal clauses or from positive declaratives in the text. In examples (10) and (11), the distant past tense is indicated on the verbs $p$-oromidioumo 'they heard' and p-oti-dio-umo 'they were standing'. Negative declaratives are usually marked for person and number (11), but it is not required as in (7) and (9). I do not yet understand what determines the different use.
(10) Uubi-ro aiha p-oromidio-umo, meree ata odau bia, ruu people-NOM therefore D.PST-hear-PL.SBJ person other go NEG 3SG omoabai.
help
'Therefore the people heard him, but not one person went, to help him.' (Uhara and Aipau 2017:12)
(11) Ka rii-ro ii-ho-dio-umo bia, aiha CONJ 3PL-NOM PL.OBJ-eat-HAB-PL.SBJ NEG therefore p-oti-dio-umo burio~burio.
D.PST-stand-HAB-PL.SBJ year $\sim$ RDUP
'And they (the people) were not eating them, therefore they (the banana palms) were standing there for many years.' (Aipau 2017a:2)

Negative declaratives have a secondary clause form in the same way that positive declaratives do. They are formed by bia 'NEG' occurring in parallel with $=k a$ ' DEC '. This parallel can be seen in example (12), with $i-r o b u-i=k a$ 'they lay down' and uro- $i$ $i$-robu bia 'they did not sleep', and in example (13) between oma'ati bia 'not working' and odai=ka 'going'.
(12) Hiei=ida i-robu-i=ka, rii mea uro-i there=LOC PL.MID-sleep/lie-?=DECL 3PL good sleep-DET
i-robu bia, ra'ati hiiro=iri, aiha p-oroi'io-umo. PL.MID-sleep/lie NEG mosquito many=PURP therefore D.PST-live-PL.SBJ
'They lay down there, but they did not sleep well, because there were many mosquitoes, therefore they stayed awake (lit. they stayed alive).' (Bavi 11)
(13) Ara meree-hio-i oma'ati bia, odai=ka.

DEM person-boy-DET work NEG go=DECL
'This boy is not working, he is going.'
The combination of keehi 'small' and bia 'not' is an idiomatic way of saying very much or very large, using the negative to form a positive declaration.
(14) Ka uubi keehi toe a'ai-mo bia.

CONJ people small fear do-PL.SBJ NEG
'And people were very afraid (lit. not a little afraid).' (Aipau 2017:3)
(15) Moo tomio-i keehi mea bia.

1SG decoration-DET small good NEG
'I am very beautiful.' (Lit. 'My decorations are not a small goodness/beauty.')

### 7.2 Imperative

As with declarative and interrogatives, Kope has different forms for positive and negative imperatives. Wurm (1973:231) states that Island Kiwai has
a large range of imperative forms denoting actions ordered to be carried out immediately, or in the near future, or at some time, or repeatedly, or habitually, or as something that must or should be done, or as something whose performance is only advised and not definitely ordered... in the negative only two basic forms occur... one denoting present and past, and one the future.

While I can agree with the statement about the two basic forms in the negative, I have not discovered as many positive imperatives in Kope as in Island Kiwai. This difference may be due to language differences, and may be due to the limitations of my current understanding of Kope.

### 7.2.1 Positive imperatives

Positive imperatives are defined by the number of people being given a command, the time frame in which the action is expected to occur, and the level of politeness.

The basic imperative form is the verb root, sometimes plus $-i$. The role of $-i$ has not been fully studied in this paper, as it potentially has numerous functions. This imperative form is used at the moment of an action. While plural subject can be marked, it is more common for it to be unmarked, with context indicating who it applies to.
a. Er-ea'a-i! MID-see-?
‘Look out!'
b. Odau!
Go
'You (SG or PL) go!'
c. Odau-mo! go-PL.SBJ
'You-PL go!'
d. Oohia-i!
catch-?
'Catch! (SG or PL)'
(17) Moo-ro aia r-odu'a-i, "Odau!" ruu odai-a'ai. Ka-mia aura 1SG-NOM if 1 -s-say-? go 3 SG go-FUT CONJ-CONJ that hiei aia r-odu'a-i, "Oo'u!" oo'u-i-a'ai. Moo himo'a there if 1 P -say-? come Come-?-FUT 1SG messenger meree- $i \quad r$-odu'a-i "Ara raa-i ododiai," ruu-ro person-DET 1P-say-? this thing-DET make 3SG-NOM ododiai-a'ai. make-FUT
'If I say "Go!" he will go. And if I say to that one there, "Come!" he will come. If I say to my servant, "Make this thing!" he will make it.' (Lk 7:8)

This basic imperative form can be strengthened by adding aiha 'therefore,' and further strengthened by adding the personal pronoun, to focus on the person being spoken to (18). Aiha has further discourse functions that have not yet been studied.
(18) Aiha odau! Roo aiha odau! therefore go 2SG therefore go
'You must go!' 'You must go!'
The presence of $=k a$ makes the imperative inclusive of the speaker and hortative. Odai-ka! means 'let's go', not the expected *r-odai-ka, even though the first person is involved.

An element of time can also be included in imperatives. The suffix -rie is the singular imperative for something that should happen soon, but not immediately. There is not an equivalent morpheme for plural subjects; in such cases the standard plural subject marker -(u)mo is used, and not -rie, as in (19)c.
a. Ari'i-rie!
scrape-IMP.SG.NR
'You scrape it (coconut) later!'
b. I-ri'i-ti-rie!

PL.OBJ-scrape-ITER-IMP.SG.NR
'You scrape them later!'
c. I-ri’i-ti-mo!

PL.OBJ-scrape-ITER-PL.SBJ
'You-PL scrape them (now or later)!
Another way time can be included is through the addition of $-b u$ ' $a$ 'a small piece; a short time, a little while', which is related to the adjective -buo 'small'.
(20) Om-oti-bu'a-umo duu-i

CAUS-stand-small.piece-PL.SBJ food-DET
m-iito-kaame.
2|3.IRR-cook.pl-NR.PST.IRR.PL.SBJ
'Wait a little while, they are probably cooking the food.' (Bavi 7.3)
In discussing (20), I was told that the same instruction to a single person would be om-oti-bu'a 'you stay a little while', but that if you were instructing them to stay for a longer time, it would be om-oti 'you wait' or om-oti-mo 'you-PL wait.'

In discussing ways to give instructions, it became clear that many things that could be expressed negatively as a prohibition, are actually phrased in a positive way.

So, rather than using an imperative about what not to do, Kope speakers are more likely to use a positive statement as a warning about the dangers of doing something. In sport, they are likely to say emeheai! 'Leave it!' to mean 'Do not touch it', when a ball is about to go over the boundary line. Erara-ka! 'It is hot!' serves as a warning to not touch something. Someone may be told Eree 'ai! 'Look out for yourself!', while Ahu! 'Be strong!' is regularly heard as a warning to people to not slip.

Along with these imperative forms, other grammatical forms, such as questions and direct address, are used with the illocutionary force of a command, but are polite in form. The most polite form uses a question form to suggest that someone does something, such as leaving (21).

## (21) Mea-ha-ra odai?

good-FOC-Q go
‘Are you going?' (Intended meaning: ‘I suggest you go now.')
The next level of politeness and illocutionary force to acknowledge what someone is doing, is accomplished by including - $o$ in direct speech (22). This is the only verbal use of $-o$ that I am aware of. On nouns, it is used as a polite form of direct address, as in (23).
(22) Odau-o!
go-voc
'You (SG/PL) are going!'
(23) Himabu-0, oo'и ara momo'o-i eidai!

Himabu-vOC come DEM bird-DET take
'Himabu, (please) come and take this bird!'
The use of $m a$ - indicating an obligation is a third polite form with the function of an imperative, but not the form. This prefix is used in instructions and announcements, is descriptive, and does not have the immediacy of the other forms.
(24) Ma-i-ahio-i, irai roo ma-er-ea'a-i, tu-i

OBLG-PL.OBJ-cut-? but 2SG OBLG-MID-see-? hand-DET
or-oru'ua-i-aike.
MID-cut-?-NEG
'You should cut them, but you should look after yourself, do not cut your hand.'

The obligative modal ita 'must' can also be used as an imperative, as is demonstrated in §8.1. These various polite forms go some way to meeting the long list of imperatives that Wurm referred to in Island Kiwai (1973:231).

### 7.2.2 Negative imperatives

Kope has three ways of expressing a negative imperative.
The first way, used in instructions, is the suffix - ' $a$, and is the more polite form, illustrated in (25)-(27).
(25) Maria, toe a'ai-'a!

Mary fear do-NEG
'Mary, do not fear!' (Lk 1:30)
(26) Toe a'ai-mo-'a!
fear do-PL.SBJ-NEG
'Do not fear!' (Lk 2:10, to the shepherds)
(27) Meree ata om-oadu'o-'a! person other BEN-talk-NEG
'Do not tell another person!' (Lk 5:14)
A second form of the negative imperative is -aike (SG) and its plural counterpart -aikeme, as in (28)-(29). In discussions with the translation committee, I have been told that -aike is older Kope, and more closely related to Kerewo, and that younger people use - 'a rather than -aike.
(28) Roo-ro ata urio obodo-aike!

2SG-NOM other spirit follow-NEG
'Do not follow another spirit!'
(29) Kasara=ido tekisi mori ema'ai-aikeme!

Caesar=GOAL tax money give-NEG.PL.SBJ
'Do not give taxes to Caesar!' (Lk 23:2 (1980s draft))
The third and strongest negative imperative form uses bia ' NEG ', as in (30)-(31). Bia cannot be used with a plural subject in a command, although it can be used that way
in a declarative form and with the modal modobo 'able'. If a plural subject needs to be specified, either the plural negative -mo- 'a (26) or -aikeme (29) will be used.
(30) Oobe-i iimo-i bia hepu=ida! saliva-DET spit-? NEG earth=LOC
'Do not spit on the ground!'
(31) Roo Pai-dubu-i Iehoma, roo-ro emahiba=ida, ede'a-i bia. 2SG chief-man-DET God 2SG-NOM test=loC put-? NEG
'Do not put the Lord God to the test.' (Lk 4:12)

### 7.3 Interrogative

Questions in Kope are marked through a combination of question words at sentence level and verbal affixes. Prefixes mark if a question has a polar yes/no answer, and if it is being asked of the first person, or the non-first person. Suffixes combine information about the tense as well as the mood of a question (33), (35). These tense markers have already been described in chapter 5 with some of the homophones and complications being discussed in 3.1.2 and 7.1.1, and Table 6.

The polar question marker in Kope is $a$-. The answer to such a question is typically 'yes' or 'no', and hence $a$ - is glossed as 'Y.N'. This prefix is always used in combination with a person marker: $r$ - for first person (34), $m$ - for non-first person in the future, present and near past, and $g$ - in the intermediate and distant past (35). While $m$ - can occur without $a$ - to form content questions in these tenses (32), $g$ cannot be used without $a$ - to form content questions in the other tenses. The prefix $r$ can occur without $a$ - in all tenses to form a content question, as is shown in table 8 in 4.2.2.
(32) Roo ra'u rio $\boldsymbol{m}$-a'ai rimo-ato? Roo rimo i-modoboa-i

2SG what want $2 \mid 3$.IRR-do 1PL-LOC 2SG 1PL PL.OBJ-destroy-?
$\boldsymbol{a}-\boldsymbol{m}-$ oo ' $u$ ?
Y.N-2|3.IRR-come
'What do you want to do to us? Have you come to destroy us?'
(Lk 4:34)
(33) Ra'u-ri m-a'ai-du-umo?
what-PURP 2|3.IRR-do-IRR-PL.SBJ
'Why do you-PL do this?'
(34) Ri'o iraromo=ida, moo miro-i a-r-om-oo'u, ara hepu 2PL thought=INST 1SG peace-DET Y.N-1P-CAUS-come this ground geema-i eito?
great-DET GOAL
'Do you think (lit. in/with your thoughts) do I bring peace to this big land?' (Lk 12:51)
(35) Tetuu, roo duba-i a-g-uuho-die?
yesterday 2 SG banana-DET Y.N-2|3.IRR-eat-INT.PST.IRR.SG
R-uuho-die.
1P-eat-INT.PST.SG
'Did you eat a banana yesterday? I ate one.'
While primarily being used on questions, these markers can also be used for irrealis, as is discussed in §8.3.

While primary clauses use verbal morphology to mark a question, the parallel to the declarative $=k a$ in secondary clauses is the interrogative $=r a$ and its variant $=r i e$, glossed as $\mathrm{Q},(36)$. As a general guide, =rie is used in Wouobo and Mira Goiravi, while $=r a$ is used in the other Kope villages. It is rare for this clitic to be used on a verb, but when it occurs there, it follows the pattern of secondary clauses in not needing to mark the person or the number of the subject (37). The clitic $=r a$ is usually used on verbless clauses or on nouns, including nominalised verbs (38). There is also a homophone $-r a$, which is a conjunction meaning 'and' (39).
a. $M e a-h a=\boldsymbol{r a}$ ?
b. $M e a-h a=k a$ !
good-FOC=Q
'Is it good?'
good-FOC=DECL 'It is good!'
(37) Rimo ra'aibou $a^{\prime} a i=\boldsymbol{r a}$ ?

1PL how do= $=$
'How should we do (this)?
(38) Moo-ro ri'o ai-r-i-tohetai, rimo bubuu-i-ro ra'u 1SG-NOM 2PL FOC-1P-PL.OBJ-ask 1PL law-DET-NOM what r-i-m-apui Sabati=da ma-r-a'ai-mo=ra-i, mea 1P-PL.OBJ-BEN-point Sabbath=LOC OBLG-1P-do-PL.SBJ=Q-DET good ododiai=ra ee, memiho ododiai=ra oroi'io-i omoabai=ra ee, make $=\mathrm{Q}$ or evil make=$=\mathrm{Q}$ life-DET help=$=\mathrm{Q}$ or
omodoboai $=\boldsymbol{r a}$ ?
destroy=Q
'I ask you-pl, what does our law tell us (lit. point us) how we should do on the Sabbath, to make good or to make evil, to help life or to destroy (life)?' (Lk 6:9)
(39) Roo abea-ra maamu-ra-i ma-i-maabe-i.

2SG father-CONJ mother-CONJ-DET OBLG-PL.OBJ-respect-?
'You should respect your father and mother.'

## 8. Modality

Modality is "an indicator of either the speaker's attitude toward the proposition being expressed, or the actor's relationship to the described situation" (Kroeger 2005:347). Kope has several modality markers. Some of these are affixes, such as for obligation, purpose, and irrealis, while others are modal words, such as for expressing doubt, abililty, and desire. These can work in combination to strengthen and change the modality being expressed.

### 8.1 Obligation

Obligation is expressed by the obligative prefix $m a$ - as well as by the modal word ita 'must'. These morphemes have already been mentioned in $\S 7.2 .1$ on imperatives. The difference in strength of these two deontic morphemes makes it difficult to establish a clear gloss showing the different intensities; ma- is glossed as 'OBLG', while ita is glossed as 'must' to aid in clarity.

The prefix $m a$ - has the force of a strong suggestion, that it is the right and proper thing to do, and one should conform to this, but it is not guaranteed to happen, as in (1)-(3). In free translations, it is rendered with 'should'.
(1) ...ka roo taitai meree-i gii'epu ma-ema'ai... CONJ 2SG close.near person-DET compassion OBLG-give
'...and you should give compassion to your neighbour...' (Lk 10:27)
(2) Tutue uio-umo, mami'o-ra meree-ra-i
conch blow-PL.SBJ mothers-CONJ child-CONJ-DET
ma-iohau-mo.
OBLG-come.out-PL.SBJ
'Blow the conch shell and the mothers and children should come out (from their hiding places).'
(3) Roo hoohoo re'ei=da, duu-i ma-ii-ho-i.

2SG face place=LOC food-DET OBLG-PL.OBJ-eat-?
'You should eat what is before you.'
The modal word ita is stronger, and is almost a command, with the force of being the only option, else there will be significant consequences, as in (4)-(6).
(4) Roo muramura-i ita ii-ho turiaha himio-i, m-odau-die 2SG medicine-DET must PL.OBJ-eat all day-DET 2|3.IRR-go-IRR roo gimo-i m-oropoi'o. 2SG sick-DET 2|3.IRR-finish
'You must eat your medicine every day, and your sickness should go, it should finish.
(5) Ka ohio meree otoo-i a'ai, ruu paira-i ita aho'o, CONJ boy person push.out-? FUT 2SG name-DET must call Iesu. Jesus
'And you will give birth to a boy, and you must call his name Jesus.' (Lk 1:31)
(6) Mea-ha ita oidio mapea=ida, tibiri aubo-i geema=ka. good-FOC must be.inside bow=LOC ocean wave-DET big=DEC
'You must stay in the boat's bow, the ocean waves are big.'
The two morphemes ita 'must' and ma- 'obLG' cannot co-occur with the same verb root.

### 8.2 Purpose

While purpose is not always included in the category of modality, Palmer (2001:8384, 154-157) includes it within modality in both Australian and Papuan languages as a function of irrealis, including in complement and oblique clauses. I follow his approach here.

In Kope, purpose is expressed through the suffix -iri 'PURP', which while primarily meaning 'so that' (7)-(8) also has a causal element to it (9). Clauses using -iri are subordinate clauses, and as such may not always have the full marking for person and number, or for tense.
(7) Ruu er-ehe'ea-i=ka, oodo-iri.

2SG MID-turn.around-?=DECL go.downstream-PURP
'He turned himself around so that he was going downstream.'
(8) $K a \quad$ rimo-ro ai-pi-r-ahiai-mo, ii-ho-iri. CONJ 1PL-NOM FOC-D.PST-1P-cut-PL.SBJ PL.OBJ-eat-PURP
'And we cut it down (a bunch of bananas), for eating.' (Aipau 2017a:3)
(9) Kamia ruu-ro i-domoia-ti-dio-iri, rio i-a'ai-mo CONJ 3SG-NOM PL.OBJ-straighten-ITER-HAB-PURP want PST-do-PL.SBJ
uubi ai-p-i-domoia-ti-dio.
people FOC-D.PST-PL.OBJ-straighten-ITER-HAB
'And he healed (lit. caused straightening) to the people who wanted healing.' (Lk 9:11)

Most commonly -iri is combined with the obligative $m a$ - to give a sense of something being done so that an obligation can be met, 'so that SBJ could'. This combination has less of a sense of obligation 'should', and more of a sense of purpose 'could'. These are also subordinate clauses, and while inflected for person and number, they are not inflected for tense, as in (10)-(12).
(10) Rii ai-p-odau-mo ruu-ido, ruu rautu

3PL FOC-D.PST-go-PL.SBJ 3SG-GOAL 3SG with
ma-odabuai-mo-iri.
OBLG-gather-PL.SBJ-PURP
'They went to him, so that they could gather with him.'
(11) Aa'o ra'u-ri ohu'odi-dio-i=ka, rii-ti re'ei-eito
that what-PURP rush.out-PROG-?=DECL 3PL-DU place-GOAL
$\boldsymbol{m a}$-oorio-bii-mo-iri.
OBLG-play-TRI-PL.SBJ-PURP
'For that reason he rushed out, to the place with the two of them, so that they could play together.'
(12) Tehata Saturday rimo ai-pi-r-ohu'o-umo Bavi, before.yesterday Saturday 1PL FOC-D.PST-1P-go.down-PL.SBJ Bavi
boubou-i ma-r-i-ma'ai-mo-iri, Bavi.
thanksgiving.gift-dET OBLG-1P-PL.OBJ-give-PL.SBJ-PURP Bavi
'Last Saturday we went downstream to Bavi to give a thanksgiving gift at Bavi.' (t3:1)

### 8.3 Irrealis

Irrealis co-occurs with the person marking prefixes. The first person prefix $r$ - is required whenever there is core involvement of the first person, whether irrealis or not (13). The non-first person prefix $g$ - only occurs in irrealis situations (14)-(16). See $\S 4.2$ (person marking) and $\S 7.3$ (interrogative) for further details.

While irrealis is marked with the person prefixes, it also relies on the same tense/mood suffixes that are used in questions, such as $-d u$ 'IRR' in (13), (16) and (20), and -die 'IRR' in (16).
(13) Irai ri'o boi'o-ro r-oromidio-du-umo moo, ri'o but 2PL who.PL-NOM 1P-listen.hear-IRR-PL.SBJ 1SG 2PL ai-r-i-odu'ai... FOC-1P-PL.OBJ-say
'But to you who would listen to me, I say these things...' (Lk 6:27)
(14) Roupa, ruи duи-i a-g-ototo, ee, ru'a-i $a$-g-e'ebo. maybe 3SG sago-DET Y.N-2|3.IRR-beat or tree-DET Y.N-2|3.IRR-cut 'Maybe he beat sago, or maybe he cut down a tree.'
(15) Uubi tauo a-g-iapui-mo, oma'ati r-a'ai-ka-umo. people PF Y.N-2|3.IRR-appoint-PL.SBJ work 1P-FUT-PRS-PL.SBJ 'If people are appointed we will start work.'
(16) $K a$ roo hie'e=ida emidio-i a'ai m-odau-die, roo iara CONJ 2SG here=LOC remain-? fUT $2 \mid 3$. IRR-go-IRR.SG 2 SG last mori gaa'u=ida ta'ii m-a'ai-die. money one=INST pay.price $2 \mid 3 . \operatorname{IRR}$-do-IRR.SG
'And you will stay here (in prison), it (the debt) would go, until you would pay the last piece of money.' (Lk 12:59)

The conjunction aia 'if' also indicates an irrealis clause, and must be followed by an irrealis prefix (17)-(18). See also example (18) in §4.2.
(17) Roo ruu-ro, aia m-em-ee'a, ka ruu rio ii'ii a'ai. 2SG 3SG-NOM if 2|3.IRR-BEN-see CONJ 3SG want grow FUT 'If he would see you, then his desire will grow.' (Gabo 2017:4)
(18) Ri'o-ro bubu-i aia m-ea'a-du-umo himio-i ooruo 2PL-NOM cloud-DET if 2|3.IRR-see-IRR-PL.SBJ sun-DET rise hapuo=ida, ri'o gaa'u hi'a-ha aa'o-i a'ai-ka-umo, "Mihae-i side $=$ LOC $\quad 2 \mathrm{PL}$ one very-FOC say-? FUT-PRS-PL.SBJ rain-DET oo'u-i a'ai."
come-? FUT
'If you would see a cloud rise in the east (lit. sun rise side), you will quickly (lit. very one) will say, "The rain will come." (Lk 12:54)

The interplay of $m$ - 'would', and $m a$ - 'should' is demonstrated in examples (19)(20). Example (19) also shows how the declarative $=k a$ changes to $=r a$ in irrealis sentences as well as in interrogatives (§7.3).
(19) Irai roo aia m-odau go'oto ata-i-to, ida ge'ii rautu but 2 SG if $2 \mid 3$.IRR-go village other-DET-GOAL then happy with o'opai-mo tiato=ra, ma-odai gabo-i ipi eito, ida invite-PL.SBJ nothing=Q OBLG-go street-DET mid.section GOAL then ma-aa'o-i... OBLG-say-?
'But if you would go to another village, then should they not invite you with happiness, you should go into the middle of the street, then you should say...' (Lk 10:10)
(20) Ri'o-ido boho uubi, ri'o-ro rio ma-i-ma'ai, 2PL-GOAL enemy people 2PL-NOM want OBLG-PL.OBJ-give
mea-i-ha ma-i-m-ododiai, ka ma-i-ma'ai, irai good-DET-FOC OBLG-PL.OBJ-CAUS-make CONJ OBLG-PL.BEN-give but
om-oaima-iri or-omoti bia. Ri'o ibai
BEN-answer-PURP MID-wait NEG 2PL like.that
a-m-ododiai-du-umo, ta'ii geema-ha oo'a-i a'ai.
Y.N-2|3.IRR-make-IRR-PL.SBL pay great-FOC be-? FUT
'To your enemies, you should give your want/love, you should make good things (for them), and give to them, but not wait for a repayment (lit. answer). If you would do like that, your pay will be great.' (Luke 6:34)

### 8.4 Dubative

Doubt is expressed with the word roupa 'maybe'. This is a separate word that introduces a dubative clause. What follows may be marked irrealis (21), realis (22), or a combination (23).
(21) Roupa moto=ida=ra, ee pa'ea-i a-m-odau.
maybe house $=$ LOC $=\mathrm{Q}$ or garden-DET Y.N-2|3.IRR-go
'Maybe she is at the house, or she might be going to the garden.'
(22) Roupa p-oorio, ee roupa ru'a-i p-ioro.
maybe D.PST-play or maybe tree-DET D.PST-go.up
'Maybe she played games, or maybe she climbed trees.'
(23) Roupa mi'a idio-ka-umo, ee kamara
maybe soup drink-PRS-PL.SUBJ or sweet.potato
a-m-ii-ho-du-umo.
Y.N-2|3.IRR-PL.OBJ-eat-IRR-PL.SBJ
'Maybe they are drinking soup, or they might be eating sweet potatoes.'

### 8.5 Abilative

Palmer (2001:10) includes ability as a form of dynamic modality, that "has to be interpreted rather more widely than in terms of the subjects' physical and mental powers, to include cirmcumstances that immediately affect them."

In Kope, the modal for ability is a separate word mobodo 'able'; this is not a verbal morpheme, but functions as an abstract noun. It most commonly occurs as modobo bia 'not able', taking bia for negation, rather than tiato 'nothing', as is the pattern with other abstract nouns.
a. $M o d o b o=r a$ ?
able=Q
'Are you able? Can you?'
b. Modobo $=k a$ !
able=DECL
'I am able! I can!'
c. Modobo bia.
able NEG
'He is not able. He can't.'
(25) Rii ii'ii modobo bia.

3pl grow able not
'They were not able to grow.'
(26) Ka meree-keeke-i m-oo'u-mo moo=ido, mabu and person-pieces-DET $2 \mid 3$.IRR-come-PL.SBJ me=GOAL because
araibau Iehoma Pai-emidio-erara-i goro=ida emidio-i like.this God chief-remain-power-DET area=LOC remain-?
modobo $=k a$.
able= DECL
'And the children (lit. pieces of people) would come to me, because (ones) like these are able to remain inside the kingdom of God.' (Lk 18:16; taken from the Jesus Film)

### 8.6 Desiderative

Desire is expressed with the abstract noun rio 'want, desire', and as such can be used in verbless clauses (27) and (29). Palmer (2001:131,216-217) gives examples of the desiderative, but in conjunction with a subjunctive mood. Kope can use rio 'want' with both irrealis (28), and realis (30).
a. Rio $=r a$ ?
b. $R i o=k a$.
want=Q
want=$=$ DECL
'Do you want it?'
'I want it.'
(28) Moo rio=ka raa ma-r-uuho.

1SG want=DECL fish OBLG-1P-eat
'I'd like to eat a fish.' (Lit. 'My want/desire is I should eat a fish.')
(29) Ruu rio hi'a=ka.

2SG want very=DECL
'(I) really like you.'
(30) Roo ruu-ro, aia m-em-ee'a, ka ruи rio ii'ii a'ai, roo 2 SG 3SG-NOM if 2|3.IRR-CAUS-see CONJ he want grow FUT 2SG ma-om-odai-ri.
OBLG-CAUS-go-PURP
'If he would see you, then his desire will grow, so that he will take you.' (Gabo 2017:4)

### 8.7 Counterfactual

Kope has at least one counterfactual particle. Mei 'CONTR' is used when something would have happened, if the circumstances had been right, but did not happen.
(31) Tehata, mihae-i aa'o-ato, moo moto=ida mei before.yesterday rain-DET spoke-LOC 1 SG house=$=$ LOC CONTR
$r$-emidio $=k a$, irai, himio ai-p-oti, iri moo
1P-remain=DECL but sun FOC-D.PST-stand therefore 1SG
pa'ea-to pi-r-odau.
garden-LOC D.PST-1P-go
'Before yesterday, if it had rained (lit. if the rain spoke), I would have stayed at my house, but it was sunny (lit. the sun stood), therefore I went to the garden.'

In example (32) it is interesting that the translation team used mei for the first two phrases, but the past irrealis $g$ - for the third phrase. I do not know what discourse considerations defined this choice.
(32) ...uubi mei emi'ei-tuti-ka-umo, idi'idi hipura=ida, mei people CONTR sit-DIST-PRS-PL.SBJ black clothes=INST CONTR
aatimo-ka-umo, tuo'o=ida, ida g-aradodo-umo, mabu rii wear-PRS-PL.SBJ dust=INST at.last 2|3.IRR-sprinkle-PL.SBJ because 3PL
memiho- $i \quad$ re'e $i=d a \quad$ tauo $p-i-r$-eme'eai-mo.
evil-DET place=LOC PF D.PST-PL.MID-MID-turn.around-PL.SBJ
'(If the miracles which were performed in you had been performed in Tyre and Sidon,)...people would have sat down, they would have worn black clothes, they would have sprinkled themselves with dust, because they had already repented (lit. turned themselves from their evil place).' (Lk 10:13)

There may be other similar particles for other contexts. The only examples of the particle I have are in the distant past, and due to the complexity of Kope and difficulties in eliciting examples, I would not be surprised to find that a different particle is used in other tenses.

## 9. Valency-changing morphemes

Kope has both causative and applicative valency changing morphemes, as well as a reflexive morpheme that is also middle voice. In this chapter I follow the framework in Dixon and Aikhenvald (2000:14). They state that

> causative derivations all have common semantics of causation. Applicative derivations all have a common syntactic effect, with a peripheral argument being brought into $O$ function, but the semantic role of this argument varies and with it the meaning of the applicative construction.

In Kope, the causal prefix which turns an intransitive verb into a transitive verb, is om-. Clifton (1995) refers to this as marking the undergoer, and demonstrates its relationship to the Southern Kiwai ow-. Brown et al. (2016) call the similar marker $o v$ - in Urama a causative marker, a label I have also chosen to use. See $\S 9.1$ for further details.

The prefix em - $\sim$ om- is used in an applicative way, bringing the peripheral arguments of benefactor, recipient or addressee into core arguments. Clifton (1995) separates these three applicative types, but following the model of Brown et al. (2016) for Urama, I have combined them under the label of a benefactive morpheme, as described in $\S 9.2$.

The reflexive is formed by a verbal prefix, making "an intransitive stem with reflexive and/or reciprocal meaning. The $S$ of this derived verb then indicates the coreferential A and O for a reflexive ( $\mathrm{S}=\mathrm{A}=\mathrm{O}$ )" (Dixon and Aikhenvald 2000:11). With the reflexive as middle voice, it means that the initiator is also the endpoint of the action.

Middle voice in Kope uses a prefix which has the allomorphs er-, or- and ar-. When there are plural subjects, the resulting combination is $i-r$-. It is my belief that this is one of the $i$ - forms that has been called a plural absolutive. I make my case for the plural middle voice in $\S 9.3$.

In the case of the benefactive and middle voice morphemes, the shape of the initial vowel of the prefix is determined by the shape of the initial vowel of the root,
though the details of this vowel harmony are slightly different for each prefix. The benefactive prefix has two allomorphs: om- before $u$ and $o$, and em - before $i, e$ and $a$. The middle voice prefix, on the other hand, has three allomorphs: or- before $u$ and $o$, $e r$ - before $i$ and $e$, and ar- before $a$. There is no vowel harmony with the causative prefix om-. When the plural object prefix $i$ - is combined with any of these three morphemes, the presence of $i$ - deletes the initial vowel of these prefixes, resulting in $i-m$ - and $i-r$ -

### 9.1 Causative

The addition of the causative prefix om- changes an intransitive verb into a transitive one, as can be seen in the comparison of (1) and (2).

When this morpheme om- is used, it takes on the plural object marking, $i$-, as required. The intransitive root does not take a plural marking (1), so $i$ - is not an absolutive marker. The plural marking only occurs with transitive or transitivised verbs, as in (3) and (4).
(1) Rii odau-ka-umo.

3PL go-PRS-PL.SBJ
'They are going.'
(2) Rii-ro pee-i om-odau-ka-umo. 3PL-NOM canoe-DET CAUS-go-PRS-PL.SBJ
'They are taking the canoe.' (Lit. 'They are causing the canoe to go.')
(3) Rii-ro ru'a kere~kere-i i-m-odau-ka-umo. 3PL-NOM tree piece $\sim$ RDUP-DET PL.OBJ-CAUS-go-PRS-PL.SBJ
'They are taking pieces of wood.'
(4) Ruи ru'a kere-kere-i i-m-oo'u. 3SG tree piece~RDUP-DET PL.OBJ-CAUS-come
'She is bringing pieces of wood.'

### 9.2 Beneficiary

The beneficiary marker om- $\sim e m$ - is highly productive and can be added to most verbs. That is is a separate, but homophonic morpheme to the causative om- is discussed below.

Beneficiary om- ~em- indicates that the action of the verb is being done for the benefit of someone. Such an action could be speaking so that others can hear, or doing something on someone's behalf. In example (5), the benefactive indicates that the wood is being broken on behalf of an older brother.
a. Ru'a uoho, irai=da.
tree break axe=INST
'He is breaking wood with an axe.'
b. Rии ramu-abea-i era om-uoho.

3SG brother-father-DET firewood BEN-break
'He is breaking firewood for his older brother.'
Examples (6) and (7) show the plural $i$ - deleting the initial vowel of $o m-\sim e m$ - when there are plural beneficiaries.
(6)
a. Ruи obo-i i'ai.

3SG water-DET collect
'He is fetching water.'
b. Rии obo-i i-m-i'ai meree-i.

3SG water-DET PL.BEN-BEN-fetch child-DET
'She is fetching water for her children.'
When the beneficiary combines with the plural object marker $i$-, the plurality refers to the number of beneficiaries, rather than the number of semantic patients, such as items given. This is shown in (7), where there is a contrast between singular and plural patients (one fish vs many fish), and singular and plural recipients (this man vs these people). The plural $i$ - is only used when there are plural recipients, as in (7)bc, not when plural items are given to a single recipient, as in (7)a. The number of fish that are being cooked is made clear by the two related verbs: itaa 'cook one' and iito 'cook many'.
a. Ara oobo-i raa-i iito-i-'ai, ara dubu-i DEM woman-DET fish-DET cook.many-?-FUT DEM man-DET ma-em-a'ai-ri.
OBLG-BEN-do-PURP
'This woman will cook many fish, so that she can give them to this man.'
b. Ara oobo-i raa-i iito-i-'ai, ara uubi DEM woman-DET fish-DET cook.many-?-FUT DEM people ma-i-m-a'ai-ri.
OBLG-PL.BEN-BEN-do-PURP
'This woman will cook many fish, so that she can give them to these people.'
c. Ara oobo-i raa-i itaa-i-'ai, ara uubi DEM woman-DET fish-DET cook.one-?-FUT DEM people ma-i-m-a'ai-ri.
OBLG-PL.BEN-BEN-do-PURP
'This woman will cook one fish, so that she can give it to these people.'
Example (8) shows the change of om- to $i-m$ - when the causative morpheme has a plural object. In this case $i$ - refers to plural patients.
a. Ruи-ro gaa'ubuo go'ota om-odau.

3SG-NOM one coconut CAUS-go
'She is carrying one coconut.'
b. Ruu-ro hiiro go'ota i-m-odau.

3SG-NOM many coconut PL.OBJ-CAUS-go
'She is carrying many coconuts.'
Example (9) shows the combination of beneficiary and causative. It can be seen that the plural $i$ - is used when there are plural beneficiaries, but only a single patient. Equally, the plural $i$ - is not used when there are plural objects (patients), but only one beneficiary, as in (10). This demonstrates that when the causative and benefactive morphemes are used in combination, plurality of beneficiary, rather than of object (patient), is marked.
a. Ruи-ro gaa'ubuo go'ota om-om-odau ruu=ido. 3SG-NOM one coconut BEN-CAUS-go 3SG=BEN
'She is carrying one coconut for him.'
b. Ruu-ro gaa'ubuo go'ota i-m-om-odau rii=do.

3SG-NOM one coconut PL.BEN-BEN-CAUS-go 3PL=BEN
'She is carrying one coconut for them.'
a. Ruu-ro hiiro go'ota om-om-odau, ruu=ido.

3SG-NOM many coconut BEN-CAUS-go 3SG=BEN
'She is carrying many coconuts for him.'
b. Ruи-ro hiiro i-m-om-odau, rii=do.

3SG-NOM many PL.BEN-BEN-CAUS-go 3PL=BEN
'She is carrying many coconuts for them.'
In example (11) a contrast between $i$-m-obodi-dio 'chasing many spirits out of many people' and p-om-obodi-dio 'chased many spirits out of one person' can be seen, both having the beneficiary om-, but only the first verb containing the plural object prefix $i-$. To chase one thing is obodi-dio, and to chase many is ibodi-dio (see examples (34)-(37) in §4.3.5). It is clearly the benefactors, not the number of demons being chased, that are marked by om- and $i-m-$.

'The twelve disciples went with him, and some women, whom he had chased evil spirits out of and healed them, went with as one, including Maria, also called Magdalene, from whom he had chased seven evil spirits.' (Lk 8:1-2)

In summary, there are three arguments that point to the fact that beneficiary om- ~ em- and causative om- are two distinct morphemes. Firstly, the causative prefix does not undergo vowel harmony. Secondly, in combination with the beneficiary prefix om- $\sim$ em-, the plural object marker $i$ - indicates plural beneficiaries, rather than plural objects (patients), as is the case with the causative. Thirdly, combinations of these two morphemes are allowed, with the causative morpheme occurring closest to the verb root, and each prefix contributing its own semantics to the overall meaning of the verb.

Finally, while benefactive om- $\sim e m$ - is mostly used on actions that are for the benefit of someone or something, there are times when the morpheme is better described as malefactive, as the action may be to the detriment of others. The one example I have thus far recorded is em-atuhia 'to trick', as in (12)-(13). I am unaware of a root *atuhia, but the principle of tricking someone else as a negative event remains.
(12) Ka Satari-ro Iesu em-atuh-uti turiaha i-or-opoi'o=ida, CONJ Satan-NOM Jesus mAL-trick-ITER all PST-MID-finish=LOC
ruu-ro Iesu emeheai-bua-i=ka.
3SG-NOM Jesus leave-small.time-?=DECL
'Then when Satan had finished all his tricks on Jesus, he left him for awhile.' (Lk 4:13)
(13) Roo er-em-atuh-uti meree $=k a$ !

2SG MID-MAL-trick-ITER person=DECL
'You are a trickster!' (Uhara and Aipau 2017:10)

### 9.3 Middle voice

"The term middle is used with a frightening variety of meanings in present-day linguistics." (Dixon and Aikhenvald 2000:11). In this paper it is used in its traditional sense of the subject being affected by their own action, including reflexive and reciprocal actions.

In Kope, the morpheme for middle voice is $e r-\sim a r-\sim o r$-. The middle voice morpheme has the most allophones of the three valency-changing morphemes. Compare the different forms taken by these morphemes when next to an $a$-initial verb root: causative om- in om-ahoro 'start' (no vowel harmony), malefactive em- in em-
atuhia 'trick' as in (12)-(13) (partial vowel harmony) and middle voice ar- in aratohei 'ask' in (14)-(15).

The middle voice is used for reciprocal situations, such as ar-atohei 'ask each other' and ar-ai'iai 'fight each other' in (16).
(14) Ma-atohei, ka ri'o-ro eidai a'ai-ka-umo. OBLG-ask CONJ 2PL-NOM take FUT-PRS-PL.SBJ
'You should ask and you will receive.' (Lk 11:9)
(15) $K a \quad h i e i=d a ~ r i i ~ h i m i a ~ a r-a t o h e i=k a, ~ " A r a ~ d u b u-i ~ b o ' u-r a ? " ~ " ~$ CONJ then=LOC 3PL REFL MID-ask=DECL this man-DET who.sg-Q
'Then they asked each other, "Who is this man?"' (Lk 8:25)
(16) Aiha p-ar-ai'iai-do. therefore D.PST-MID-fight-DU
'Therefore they-2 were fighting each other.' (Gabo 2017:12.)
Middle voice is also used for reflexive actions. In (17) the contrast of ema'ai 'give' to someone else, and erema 'ai 'give to yourself' can be seen.
(17) Ka roo taitai meree-i gii'epu ma-ema'ai, roo himia CONJ 2SG close.by person-DET compassion OBLG-give 2SG REFL gii'epu er-ema'ai aibo-i. compassion MID-give like-DET
'And you-1 should give love/compassion to the person near you, like you give love/compassion to yourself.' (Lk 10:27)

Middle voice can be used when there is no clear object or recipient, such as when people are talking to each other (18). A clear recipient will be marked using the benefactive morpheme (19).
(18) Ara uubi ai-or-oadu-'uti-ka-umo. DEM people FOC-MID-talk-ITER-PRS-PL.SBJ
'Those people are talking.'
(19) Ata meree-i om-oadu'o bia. other person-DET BEN-talk NEG
'Do not tell another person.'

The middle voice can parallel both the benefactive (18)-(19) and causative morphemes. Examples (20)-(23) are based on the simple intransitive verb ehe'eai 'turn around'. Causative em-ehe 'eai means 'to turn something around', while middle voice er-ehe'eai is 'to turn oneself around.'

Examples (21) and (23) also show the plural $i$ - in combination with the causative and the middle voice. (Note that (15) does not have the plural $i$-, probably because the clause uses $=k a$ and in such clauses plurality is marked with neither -umo for 'PL.SBJ', nor with $i$ - 'PL.MID'; see §3.3.4.)
(20) Hapиo ata-i rautu ma-em-em-ehe'eai, ma-atotai=ka. side other-DET with OBLG-BEN-CAUS-turn OBLG-hit=DECL
'(You) should turn the other side (= cheek) so that they can hit it.' (Lk 6:29)
(21) Abeami'oi kaukai ma imehe'eai...

Abea-mi'o-i kaukau-i ma-i-em-ehe'eai
father-group-DET heart-DET PURP-PL.OBJ-CAUS-turn.around
'He will cause the turning of fathers' hearts...' (Lk 1:17)
(22) Kiauka, Iesu er-ehe'eai=ka Garereia=ato ar-aimai... okay Jesus MID-turn.around=DECL Galilee=towards MID-return 'Okay, Jesus turned himself around, to return to Galilee...' (Lk 4:14)
(23) Irehe'eaimo ri'o memihoi re'ei-da... ri'o memiho-i re'ei=ida $\begin{array}{lll}\text { i-er-ehe'eai-umo } & \text { ri'o } & \text { memino-i } \\ \text { PL.MID-MID-turn.around-PL.SBJ } & 2 \mathrm{PL} & \text { sin.evil-DET place=LOC }\end{array}$
'Turn yourselves from your bad place...' (Luke 3:3)
The middle voice morpheme comes before the benefactive and causal morphemes, with both the middle voice and the next morpheme able to be marked for plural, as can be seen in (24).
a. idiai
go.up
'go up'
b. om-idiai

CAUS-go.up
'carry one thing up'
c. i-m-idiai

PL.OBJ-CAUS-go.up
'carry many things up'
d. i-r-om-idiai-ka-umo

PL.MID-MID-CAUS-go.up-PRS-PL.SBJ
'they carry one thing of their own up'
e. i-r-i-m-idai-ka-umo

PL.MID-MID-PL.OBJ-CAUS-go.up-PRS-PL.SBJ
'they carry many things of their own up'

### 9.4 Plural absolutive or plural middle voice?

In each paper that has looked at the possibility of plural absolutive in Kiwaian languages, there have been exceptions to the rule that have evaded description. Foley (1986:129), taking his data on Southern Kiwai from Ray (1933), states that "many intransitive stems do not exhibit this alternation, the same stem being used for both singular and plural S arguments." Clifton (1995:57) has examples that show where the prefix is not triggered by a plural ergative or by a plural peripheral relation in Kope. In Urama, Brown (2009:25) argues that as "there are few occurrences of the $i$ marker in intransitive sentences with plural subjects," the marker must be more than a plural absolutive marker. My analysis of $i$ - as plural object, plural beneficiary, or past tense in subordinate clauses covers most occurrences of the morpheme in Kope, with few examples remaining unexplained, and a plural absolutive marker being unlikely.

One area in which it would be possible to analyse a plural absolutive marker is in words starting with $\mathrm{ir}^{-}$. Instead of a plural absolutive, I analyse this as the plural of the middle voice or- $\sim e r-\sim$ ar-. In example (25) I have analysed the $i r$ - in iroo 'uduumo 'we came, we brought ourselves' as being the plural middle voice, as the people all brought themselves. In example (26) I have given a hypothetical alternative analysis of the ir-being the plural absolutive with the prefix marking first person core involvement.

```
(25) Hiei-da oropoi'oi, iroo'uduumo
    hiei=ida oropoi'o-i i-or-oo'u-du-umo
    then=LOC finish-? PL.MID-MID-come-INT.PST-PL.SBJ
    emi'eituti-ka, irudemeai.
    em-ei'ei-tuti=ka irudemea-i
    CAUS-sit-ITER=DECL pray-?
```

    'Then we finished, we brought ourselves, we each sat down, to pray.'
    (26) Hiei-da oropoi'oi, iroo'иduитo
hiei=ida oropoi'o-i i-r-oo'u-du-umo
then=LOC finish-? PL.ABS-1P-come-INT.PST-PL.SBJ
emi'eituti-ka, irudemeai.
em-ei'ei-tuti=ka irudemea-i
CAUS-Sit-ITER=DECL pray-?
'Then we finished, we came, we each sat down, to pray.'
I think the analysis of the ir- in iroo 'uduumo 'we brought ourselves' in (26) as plural absolutive with first person core involvement is incorrect for two reasons. Firstly, $i$ as a plural object is consistent with the use of $i$ - in other valency increasing situations. Secondly, $r$ - as first person core involvement consistently precedes plural $i$ - and the alternative analysis would require a change of ordering.

An absolutive marker could be expected to mark the subject of an intransitive verb and the object of a transitive verb. As example (27) demonstrates, the intransitive $o o$ ' $u$ 'come' is not marked with $i$ - for plural absolutive.
a. Rii ai-p-oo'u-umo.
3PL FOC-D.PST-come-PL.SBJ
'They came.'
b. Ruu ai-p-oo'u.
3SG FOC-D.PST-come
'He came.'

When the valency is increased by the causative prefix om-, to become om-oo' $u$, 'to cause to come', then the plural object is marked (28). See also $\S 4.3 .5$ and $\S 9.2$.
a. Rii-ro ga'ubиo raa-i p-oт-oо'и-ито.

3PL-NOM one fish-DET D.PST-CAUS-come-PL.SBJ
'They brought one fish.'
b. Rii-ro hiiro raa-i p-i-m-oo'u-umo.

3PL-NOM many fish-DET D.PST-PL.OBJ-CAUS-come-PL.SBJ
'They brought many fish.'
A further increase in valency, by the addition of the beneficiary prefix, results in the plural marking of the beneficiary, regardless of the number of objects (29).
a. Rii-ro hiiro raa-i p-oт-oт-oo'и-ито

3PL-NOM many fish-DET D.PST-BEN-CAUS-come-PL.SBJ
ruu $=i d o$.
$3 \mathrm{SG}=\mathrm{BEN}$
'They brought many fish for her.'
b. Rii-ro gaa'ubuo raa-i

3PL-NOM one fish-DET
p-i-m-oт-oo'и-ито rii=ido.
D.PST-PL.BEN-BEN-CAUS-come-PL.SBJ 3PL=BEN
'They brought one fish for them.'
This pattern shows that the plural is consistently applied to the object or the beneficiary of transitive verbs, and not to the subject of intransitive verbs.

In example (30) the $i$ - is past, not plural, as it is in a dependent temporal clause, and marking a single subject. In the recording that this example is transcribed from, the word was clearly said as ierehe 'eaida 'when he turned himself around', with both vowels of the past $i$ - and the middle voice er-being pronounced. This combination of $i$ - plus the original vowel in the verbal root is one of the indicators that separates the secondary past tense $i$ - from the plural $i$-, which always triggers vowel deletion.
(30) Ida ata i-er-ehe'eai=ida, hiba-i ha then other PST-MID-turn.around=LOC crocodile-DET FOC
p-em-ее'a tuia=ida.
D.PST-CAUS-see deep.water=LOC
'Then when the other (boy) turned himself around, he saw the crocodile in the deep part of the water.'

This consistent use of $i$ - as plural beneficiary or object, and not as a marker of plural subjects of an intransitive verb, is the first of two reasons I disagree with the analysis or $i$ - in $i r$ - as a plural absolutive marker.

A second reason is that when there is first person core involvement ( $\S 4.2 .1)$, this morpheme $r$ - consistently occurs before the plural object or plural beneficiary morpheme. Examples (31)-(32) demonstrate this with the core involvement of the first person as the agent, and example (33) shows the first person as the undergoer.
(31) Rimo-ro era-i r-i-m-oo'u-ka-umo. 1PL-NOM firewood-DET 1P-PL.OBJ-CAUS-come-PRS-PL.SBJ
'We are bringing firewood.'
(32) Moo-ro rii r-i-a'a.

2SG-NOM 3PL 1P-PL.OBJ-See
'I see them.'
(33) Pirimee'amo go'otoi uubi-ro...
pi-r-i-em-ee'a-umo go'oto-i uubi-ro
D.PST-1P-PL.BEN-BEN-see-PL.SBJ village-DET people-NOM
'The village people saw us...' (t2:29)
When the combined prefixes become become pir- there is the potential to analyse it as $p-i-r$ - 'D.PST-PL.MID-MID-' or as pi-r- 'D.PST-1P-'. Context determines which analysis is correct.

When there is first person core involvement, the distant past prefix $p$ - becomes $p i$ - before the consonant $r_{-}$, to prevent a consonant cluster. This can be seen in example (34), where the verb is intransitive, and $p$ - becomes pi- because of the first person core involvement. Example (35) shows that this pattern continues when the first person is the undergoer, not the actor.
a. Rii ai-p-oo'и-ито.

3PL FOC-D.PST-come-PL.SBJ
'They came.'
b. Rии ai-p-oo'и.

3SG FOC-D.PST-come
'He came.'
c. Rimo pi-r-oo'u-umo.

1PL D.PST-1P-come-PL.SBJ
'We came.'
d. Moo pi-r-oo'u.

1SG D.PST-1P-come
'I came.'
(35) Moo abea-i-ro sikuri=da pi-r-ede'a Karati=ato.

1SG father-DET-NOM school=LOC D.PST-1P-put Karati=LOC
'My father put me in school at Karati.' ( $\mathrm{t} 1: 2$ )
When there is no first person core involvement, then pir- can be from $p-i-r$ - as in (36)-(37).
(36) Aa'o ra'u-ri, ai-piraimai-do Ierusaremai-to ruu aa'o ra'u-ri ai-p-i-ar-aimai-do Ierusarema-eito ruu
that what-PURP FOC-D.PST-PL.MID-MID-return-DU Jerusalem-GOAL 3SG
oohoi.
ooho-i
seek-?
'For that reason, they-2 returned to Jerusalem, to seek him.' (Lk 2:45)
(Note: the root *aimai does not occur on its own; araimai 'return, return oneself' and omoaimai 'answer' are related forms.)
(37) Pireibuaimo.
p-i-er-eibua-umo
D.PST-PL.MID-MID-get.up-PL.SBJ
'They got themselves up.'
or: Pireibuaimo.
pi-r-eibua-umo
D.PST-1P-get.up-PL.SBJ
'We got up.'

Further evidence that $i-r$ - is a plural undergoer in the middle voice, and not a plural absolutive followed by a core first person marker, is that both the $r$ - for first person and the $i r$ - for plural middle voice can occur in the same word. The verb eibua 'to rise or get up' is a good word to demonstrate this fact, as it can have both the middle voice er- 'get oneself up', and the causative em- 'make someone else get up', as illustrated in (38).
a. eibua
b. i-m-eibua
c. i-r-eibua
rise PL.OBJ-CAUS-rise
PL.OBJ-MID-rise
'rise, get up' 'make things rise' 'make yourselves rise'

In (39)b the addition of the initial $r$ - for first person involvement can be seen, and that its position is different from the middle voice $r$ - in ir-.
a. Rii ireibua kaumo.
rii i-er-eibua-ka-umo
3PL PL.OBJ-MID-rise-PRS-PL.SBJ
'They are getting themselves up.'
b. Rimo rireibua kaumo.
rimo r-i-er-eibua-ka-umo
1PL 1P-PL.OBJ-MID-rise-PRS-PL.SBJ
'We are getting ourselves up.'
In (40)b the $r$ - for first person core involvement is on the future auxiliary when there is first person core involvement, which further demonstrates that $i r$ - is plural middle voice, not the first person.
a. Rii ireibua a'ai kaumo.
rii i-er-eibua-a'ai-ka-umo
3PL PL.OBJ-MID-rise-FUT-PRS-PL.SUBJ
'They will get themselves up.'
b. Rimo ireibua ra'ai kaumo.
rimo i-er-eibua-r-a'ai-ka-umo
1PL PL.OBJ-MID-rise-1P-FUT-PRS-PL.SBJ
'We will get ourselves up.'
In secondary clauses, $i$ - is also a past tense marker, that can precede the first person marker $r$-. Determining the correct meaning of $i r$ - in this context can sometimes be achieved through clause level marker such as $=d a$ 'when', but at other times can only be done with the aid of a native speaker, who can tell if $i$ - is there because it was 'a while ago' or because there were 'plenty of people'.

This difficulty can be seen in (41), where the first word iroo'umoi-da 'when we came' is marked with =ida 'when' suggesting that the $i$ - is 'PST'. The final word is
iroo 'umo which could be either 'we came' or 'we brought ourselves' depending on the clause type.
(41) I-r-oo'u-mo=ida Mapaio-ha-to pi-r-i-robu, PST-1P-come-PL.SBJ=LOC Mapaio-FOC-LOC D.PST-1P-PL.MID-sleep/lie
ka himio ata-i pi-r-om-ahoro-umo oo'u-i, CONJ day other-DET D.PST-1P-CAUS-start-PL.SBJ come-?
i-r-oo'u-mo

## Baimuru.

PL.obJ-MID-come-PL.SBJ Baimuru
'We carried on but decided to sleep at Mapaio, and the next day we set out again and continued until we came to Baimuru.' ( $\mathrm{t} 1: 32$ )

This past tense $i$ - is not related to plural $i$-, as can be seen in (42), where aama'ue 'invite' moves between primary and subordinate clauses. (Aamau'e is an exception to the rule of plural objects deleting the initial vowel of the verb root. This may be due to the initial vowel being long.)
a. Moo-ro roo ai-pi-r-aama'ue.

1SG-NOM 2SG FOC-D.PST-1P-invite
'I invited you.'
b. Moo-ro roo i-r-aama'ue, ida p-oo'u.

1SG-NOM 2SG PST-1P-invite then D.PST-come
'I invited you, then you came.'
c. Moo-ro rii ai-pi-r-i-aama'ue.

1SG-NOM 3PL FOC-D.PST-1P-PL.OBJ-invite
'I invited them.'
d. Moo-ro rii i-r-i-aama'ue, ida p-oo'и-mo.

1SG-NOM 3PL PST-1P-PL.OBJ-invite then D.PST-come-PL.SBJ
'I invited them, then they came.'
There are times when the original word, without the middle voice prefix, is not clear but the plural marking remains consistent. I expect that it is examples like this, where the lexicalised causative or benefactive morpheme has been pluralised, that has resulted in an analysis of an absolutive particle by other people. In example (43), the way araimai, changes to iraimai indicates that originally it was ar-aimai, but *aimai
is not a Kope word that I am aware of. Similarly in (44), orobu would have originally been or-obu, but I am not aware of *obu as a word today.
(43)
a. Ruи paraimai.
ruu p -araimai
3SG D.PST-return
'He returned.'
b. Rii piraimaimo.

3PL p-i-araimai-umo
3PL D.PST-PL.OBJ-return-PL.SBJ
'They returned.'
(44)
a. Ruи uro orobui a'ai.
ruu uro orobu-i a'ai
3SG sleep sleep/lie-? FUT
'He will lie himself down to sleep.'
b. Rii uro irobui a'ai kaumo.
rii uro i-orobu-i a'ai-ka-umo
3PL sleep sleep/lie-? FUT-PRS-PL.SBJ
'They will lie themselves down to sleep.'

## 10. Further research

The previous chapters have described the main inflectional and derivational verbal morphemes in Kope, with some reference to clause level considerations. This description is an initial analysis of verbal morphology in Kope, written with the knowledge that further data may result in a new analysis of some morphemes. All the most common morphemes have been described, although further research is likely to uncover less common morphemes, new morpheme combinations, semantic subtleties associated with discourse factors, as well as interaction with tone and intonation. There are various parts of the verbal structure that require further research and a brief description of some of these follow.

## 1. The prefix $\boldsymbol{i}$ -

While I have attempted to disambiguate some of the meanings of $i$ - in this paper, it is not an exhaustive study, and further clarification would be useful. Petterson (pers. comm.) has suggested that $i$ - may also have a deictic function.

## 2. The suffix - $i$

On noun phrases, this suffix - $i$ functions as a determiner. On verbs and verb phrases it may be nominalising, part of a clitic that follows, or it may have yet other functions. I am often told it is there because it 'sounds right', and it may be more related to vowel harmony than to meaning.

## 3. The clitic $=k a$

The clitic $=k a$ requires further investigation to establish what kind of clauses it forms, how it relates to evidentiality in a variety of situations, and its distribution across discourse types. An analysis using the asymmetrical principles proposed by Cristofaro (2003) is one area that might reveal interesting results regarding the interaction of subordinate clauses, evidentiality and the use of $=k a$.

## 4. Focus markers

Through this paper I have glossed aiha as 'therefore' and ha- and ai- as 'FOC' but each of these particles would benefit from further syntactic and discourse analysis to
help define when a particle is needed, when it is optional, and what information it adds to the sentence or to the text.

## 5. Other possible morphemes

In my research I have observed some elements that may or may not be part of the verb root. I only have a few examples, and have not been able to establish a meaning. Their distribution and use require further investigation. Some of these are -mai in (45) and -tiai in (46).

| a. | aibi | abidio |
| :--- | :--- | :--- |
| 'paddle' (noun) | 'paddling' | abidimai |
| 'keep paddling' |  |  |

b. itoumo
'pull many thing out of the water, one by one' itomai 'pull many things out of the water, all at once'
(46)
a. oroaro oroatiai
b. aho'o aho'otiai
'call' 'calling'
(I was also told aho'otiai refers to a more polite form of calling than aho'o.)

## Appendix 1. Morpheme position class charts

This appendix summarises the information on the internal structure of Kope verbs by presenting six morpheme position class charts in table form. These six tables cover the following combinations of tense, mood and clause type: 1) declarative non-future; 2) declarative future; 3) non-declarative non-future; 4) non-declarative future; 5) secondary clauses: non-future; 6) secondary clauses: future.

Because of the large number of columns (up to nine prefixes and nine suffixes), each table is split with the top half covering prefixes and root, and the bottom half covering root and suffixes. Prefixes are numbered leftward from the root $(-2,-1$, root), suffixes are numbered rightward from the root (root, $+1,+2$ etc.). Future verb forms are compounds, consisting of a main verb with its prefixes and suffixes, followed by an additional auxiliary with its own prefix and suffixes (see §5.3).

## Information regarding all morpheme position class charts:

- $i$ - 'PL’ $(-6,-4,-2)$ deletes o/e/a in middle voice ( -5 ), beneficiary ( -3 ) and causative ( -1 ) morphemes.
- Middle voice ( -5 ) and beneficiary ( -3 ) vowel choice is determined by the vowel in the next syllable.
- Plural middle voice (-6) allows either a plural beneficiary (-4) or a plural object ( -2 ) to be also marked.
- Plural beneficiary ( -4 ) usually prevents the plural object ( -2 ) being marked, although it is possible.
- As plural beneficiary ( $-4,-3$ ) and the plural object marker ( -2 ) on the causative morpheme ( -1 ) take the same form, they can easily be confused and need to be separated by context. They require separate columns as they can co-occur.
- Progressive -dio (+1) and habitual -dio (+2) occur consecutively.


## 1. Declarative: non-future

Table 23. DECLARATIVE: NON-FUTURE

| -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (FOC) | (D.PST) | (1P) | (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| $\begin{aligned} & a i- \\ & h a- \end{aligned}$ | $p-/ p i-$ | $r$ - | $i$ - | $\begin{array}{\|l\|} \hline \text { or- / } \\ \text { er- / } \\ \text { ar- } \end{array}$ | $i-$ | $\begin{aligned} & \text { om- / } \\ & \text { em- } \end{aligned}$ | $i$ - | om- |  |


| 0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ROOT | (ITER) | (PROG) | (HAB) | (TRI) | (?) | (tense) | (SBJ) | (NEG) | (PURP) |
|  | -ti /-uti | -dio | -dio | -bii | -i | $-k a$ <br> PRS <br> -maaka <br> NR.PST <br> $-d u$ <br> INT.PST <br> -die <br> INT.PST.SG | -ито <br> PL <br> -ido <br> DU | $-\quad$ 'a <br> -aike <br> -aikeme | -iri |

## Information specific to Table 23

- Aiha 'therefore' and tauo 'perfect' can both occur immediately prior to the verb. Tauo can be abbreviated to ta- and can take a -10 position.
- Aiha cannot occur with ai- (-9) or ha- (-9). It is possible that aiha- is formed from $a i$ - and $h a-$, but this is an open question.
- $\quad-d i e(+6)$ only occurs in $1^{\text {st }}$ and $2^{\text {nd }}$ person, intermediate past.
- $-k a(+6)$ only occurs with dual and plural subjects.
- -aike $(+8)$ and -aikeme $(+8)$ do not co-occur with the other tense and person markers.
- The words bia 'NEG' and tiato 'nothing' cannot co-occur with any of the negation morphemes $(+8)$.
- Negation $(+8)$ and purpose $(+9)$ cannot co-occur.
- I have not included the imperatives -rie 'you-1 do it soon!' and -bu'o 'for a little while' as I have too few examples to place them with confidence. They possibly fit in the +5 position.


## 2. Declarative: future

Table 24. Declarative: future

| $\mathbf{- 6}$ | $\mathbf{- 5}$ | $\mathbf{- 4}$ | $\mathbf{- 3}$ | $\mathbf{- 2}$ | $\mathbf{- 1}$ | $\mathbf{0}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| $i-$ | or- $/$ <br> $e r-/$ <br> ar- - | $i-$ | om- / <br> em- | i- | om- |  |


| 0 | +1 | +2 | +3 | +4 | +5 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (ITER) | (PROG) | (HAB) | (TRI) | (?) | (1P) | AUX | (TRI) | (tense) | (SBJ) | (NEG) | (PURP) |
|  | -(u)ti | -dio | -dio | -bii | -i | $r$ - | a'ai | -bii | $\begin{aligned} & -k a \\ & \text { PRS } \end{aligned}$ | -ито <br> PL <br> -ido <br> DU | - 'a | -iri |

- Person marking is on the future auxiliary $a$ 'ai, not on the root.
- Trial can fill one of two positions; Rоot +4 or AUX +1 .
- The words bia 'NEG' and tiato 'nothing' cannot co-occur with any of the negation morphemes (AUX +4 ).
- Negation $(A U X+4)$ and purpose $(A U X+5)$ cannot co-occur.
- Tootoo 'inceptive' occurs as a separate word between the word built on the root, and the word built on the auxiliary.


## 3. Non-declarative: non-future

As this chart covers both irrealis and interrogative forms, and contrasts with the declarative form, I have labelled it as non-declarative.

TABLE 25. NoN-DECLARATIVE: NON-FUTURE

| -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (mood) | (person) | (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| aia- <br> 'if' <br> a- <br> Y.N <br> ma- <br> OBLG <br> mei- <br> 'if.had' | 1p <br> m- <br> 2\|3.IRR <br> $g$ - <br> 2\|3.IRR | $i$ - | $\begin{aligned} & o r-/ e r-/ \\ & a r- \end{aligned}$ | $i$ - | om- /em- | $i$ - | om- |  |


| 0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ROOT | (ITER) | (PROG) | (HAB) | (TRI) | (?) | (irrealis / tense) | (SBJ) | (NEG) | (PURP) |
|  | -ti --uti | -dio | -dio | -bii | -i | $-d u$ <br> IRR <br> -die <br> IRR.SG <br> -ka <br> IRR.NR.PST.SG <br> -kaame <br> IRR.NR.PST.PL | $\begin{array}{\|l} - \text {-umo } \\ \text { PL } \\ \text {-ido } \\ \text { DU } \end{array}$ | -'a | -iri |

- Aiha 'therefore' can only occur with $m a$ 'obligative' $(-8)$ when forming a verb phrase.
- aia- (-8) may be ai-a- 'FOC-Y.N-', an option not yet investigated.
- ma- and mei- (-8) cannot co-occur with $m$ - or $g$ - (-7).
- Either ma- or mei- (-8), or person marking (-7), is obligatory.
- $\quad m a-(-8)$ does not co-occur with irrealis / tense markers ( +5 ).
- $m$ - (-7) only occurs in present and near past.
- $g-(-7)$ only occurs in the intermediate and distant past and must be paired with $a-(-8)$.
- -die (+6) only occurs with questions in the intermediate past, and inconsistently in other tenses with the other irrealis markers.
- $-k a(+6)$ only occurs with questions in the near past.
-     - kaame $(+6)$ only occurs in the near past.
- $\quad B i a$ is the only negation word that can replace - ' $a(+8)$.
- Negation $(+8)$ and purpose $(+9)$ cannot co-occur.


## 4. Non-declarative: future

Table 26. Non-declarative: future

| $\mathbf{- 6}$ | $\mathbf{- 5}$ | $\mathbf{- 4}$ | $\mathbf{- 3}$ | $\mathbf{- 2}$ | $\mathbf{- 1}$ | $\mathbf{0}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| $i-$ | or- $/$ <br> $e r-/$ <br> ar- | i- | om- $/$ <br> em- | i- | om- |  |


| +1 | +2 | +3 | +4 | +5 | -2 | -1 | 0 | +1 | +2 | +3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (ITER) | (PROG) | (HAB) | (TRI) | (?) | (polarity) | (person) | AUX | (TRI) | (tense) | (SBJ) |
| -(u)ti | -dio | -dio | -bii | -i | $\begin{aligned} & a- \\ & \text { Y.N } \end{aligned}$ | $r$ 1P m2\|3.IRR | $a ' a i$ | -bii | $\begin{aligned} & -d u \\ & \text { IRR } \end{aligned}$ | -ито <br> PL <br> -ido <br> DU |

- The only non-declarative with a distinct future form is questions.
- The polar question marker (AUX -2) and person prefix (AUX -1) are prefixed to the future auxiliary, instead of the root.
- The trial marker can be in one of two places, but not both.


## 5. Secondary clauses: non-future

TABLE 27. SECONDARY CLAUSES: NON-FUTURE

| -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (PST) | (1p) | (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| $\begin{aligned} & i- \\ & \text { PST } \\ & p-/ p i- \\ & \text { D.PST } \end{aligned}$ | $r$ - | $i$ - | $\left\lvert\, \begin{aligned} & \text { or- / } \\ & e r-/ a r- \end{aligned}\right.$ | $i$ - | $\begin{aligned} & \text { om- / } \\ & \text { em- } \end{aligned}$ | $i$ - | om- |  |


| 0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ROOT | (ITER) | (PROG) | (HAB) | (?) | (tense) | (SBJ) | (?) | (clitic) |
|  | -ti / -uti | -dio | -dio | -i | -ka <br> PRS <br> -du <br> INT.PST | -ито <br> PL <br> -ido <br> DU | -i | $\begin{aligned} & =k a \\ & \mathrm{DECL} \\ & =d a \\ & \mathrm{LOC} \end{aligned}$ |

- Various elements (positions $-8,-7,+5,+6$ ) are not commonly used in secondary clauses, although it is possible.
- $\quad i-\quad$ PST' $(-8)$ is only used for past tense in secondary clauses.
- $i$ - 'PST' $(-8)$ does not replace the next vowel, as occurs when $i$ - 'PL' $(-6,-4)$ occurs.


## 6. Secondary clauses: future

Table 28. SECONDARY CLAUSES: FUTURE

| $\mathbf{- 6}$ | $\mathbf{- 5}$ | $\mathbf{- 4}$ | $\mathbf{- 3}$ | $\mathbf{- 2}$ | $\mathbf{- 1}$ | $\mathbf{0}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| (PL.MID) | (MID) | (PL.BEN) | (BEN) | (PL.OBJ) | (CAUS) | ROOT |
| $i-$ | or- /er- /ar- | i- | om- / em- | i- | om- |  |


| $\mathbf{0}$ | $\mathbf{+ 1}$ | $+\mathbf{2}$ | $\mathbf{+ 3}$ | $\mathbf{+ 4}$ |
| :---: | :---: | :--- | :--- | :--- |
| ROOT | (ITER) | (PROG) | (HAB) | $(?)$ |
|  | $-t i /-u t i$ | $-d i o$ | $-d i o$ | $-i$ |
|  |  |  |  |  |
|  |  |  |  |  |


| $\mathbf{- 1}$ | $\mathbf{0}$ | $\mathbf{+ 1}$ | $\mathbf{+ 2}$ | $\mathbf{+ 3}$ | $\mathbf{+ 4}$ |
| :--- | :---: | :---: | :---: | :---: | :--- |
| $(l P)$ | AUX | (tense) | $(S B J)$ | $(?)$ | (clitic) |
| $r-$ | $a \prime a i$ | $-k a$ <br> PRS | $-u m o$ <br> PL <br> $-i d o$ <br> DU | $-i$ | $=k a$ <br> DECL <br> $=d a$ <br> LOC |

- Various elements are not commonly used in secondary clauses (AUX -1, AUX +1 , AUX +2 ), although it is possible.


## Appendix 2. Three texts

## Text 1. A personal experience

Source: Writers' Workshop run by Robert Petterson in 2005.
Author: Abel Baia (also called Marame).
Village: Meagoma
(1) Moo go'oto-i paira-i=ka Mia'ogoma-i, Kikori goro=ida 1SG village-DET name-DET=DECL Meagoma-DET Kikori under=LOC $o^{\prime} a=k a$.
be=DECL
'The name of my village is Meagoma; it is in the Kikori region.'
(2) Moo paira-i=ka Marame, $k a$ moo tu-i hapuo mia reto'a=ka 1SG name-dET=DECL Marame CONJ 1SG hand-DET side and two=DECL burio $=i d a$, moo abea-i-ro sikuri $=d a \quad$ pi-r-ede'a, Karati=ato. year=LOC 1SG father-DET-NOM school=LOC D.PST-1P-put Karati=LOC 'My name is Marame, and when I was seven years old, my father put me in school at Karati.'
(3) Moo abea-i muramura oma'ati dubu=ka.

1SG father-DET medicine work man=DECL
'My father was a medical orderly.'
(4) Moo тати-i go'oto oobo=ka.

1SG mother-DET village woman=DECL
'My mother was a housewife.'
(5) Ka aa'o burio-i moo abea-i ai-p-otiodoai-mo Iraua

CONJ that year-DET 1SG father-DET FOC-D.PST-send-PL.SBJ Inaua
go'oto-i.
village-DET
'That year my father was sent to Inaua.'
(6) Rimo odai=ka Mia'ogoma-i go'oto=ida Iraua.

1PL go=DECL Meagoma-DET village=LOC Inaua
'We went from the village of Meagoma to Inaua.'
(7) Aa'o burio=ida moo ramu-i Ru'aupo, Baimuru sikuri=da that year=LOC 1 SG older.brother-DET Ru'aupo Baimuru school=LOC pi-r-ede'a-umo.
D.PST-1P-put-PL.SBJ
'That year we put my older brother, Ru'aupo, at Baimuru school.'
(8) Aa'o burio-i moo sikuri tiato pi-r-emidio, moo that year-DET 1SG school none D.PST-1P-remain 1SG
ria-ti Biobio-ra Mia'i-ra, ka Aio-ra
younger.brother-DU Biobio-CONJ Mia'i-CONJ CONJ mother-CONJ
Abea-ra-i-re.
father-CONJ-DET-CONJ
'That year I had no school, just living with my two younger brothers Biobio and Mia'i, and my mother and father.'
(9) Iha mea-i i-r-midio-umo=ida, kiauka made-i-ro really good-DET PST-1P-remain-PL.SBJ=LOC okay word-DET-NOM p-oo'u, rimo Mapaio ma-r-odau-mo Mapaio go'oto-i, ka D.PST-come 1PL Mapaio OBLG-1P-go-PL.SBJ Mapaio village-DET CONJ rimo Iraua emeheai=ka.
1pL Inaua leave=DECL
'We had a good life there, until word came for us to go to Mapaio village, and we left Inaua.'
(10) Ka rimo Iraua emeheai=ka burio gaa'u-i didimo=ida.

CONJ 1PL Inaua leave=DECL year one-DET after=LOC
'We had been at Inaua for one year when we left.'
(11) Ru'aupo ai-pi-r-emeheai-mo burio ata-i Baimuru

Ru'aupo FOC-D.PST-1SBJ-leave-PL.SBJ year other-DET Baimuru
sikuri $=d a$, burio ata-i ma-aa'o-iri.
school=LOC year other-DET OBLG-say-PURP
'But we had to leave Ru'aupo for another year's education at Baimuru school.'
(12) $K a \quad$ hioi $=d a$ rimo abea- $i$ oma'ati om-ahoro- $i=k a$.

CONJ quick=INST 1PL father-DET work CAUS-start-?=DECL
'And so our father began working there.'
(13) Moo rautu mia sikuri om-ahoro-i=ka.

1 SG with and school CAUS-start-?=DECL
'As for me, I started school there.'
(14) Biobio, Mia'i ka Kairapu, rii meree kee $\sim k e=k a$.

Biobio Mia'i conj Kairapu 3pl person small~RDUP=DECL
'Biobio and Mia'i and Kairapu were still small.'
(15) Moto=ida p-emidio-dio-umo.
house $=$ LOC D.PST-stay.sit-HAB-PL.SBJ
'They used to stay at home.'
(16) Odai $=k a$, taaho- $i$ kimai $\quad$ a'obo- $i=k a$, $=d a$, ra- $i$
$\mathrm{go}=\mathrm{HAB}$ prawn-DET PST-catch-DET $=\mathrm{HAB}$ fishing.line do=INST fish-DET e'uai=ka.
catch $=\mathrm{HAB}$
'They would catch prawns, and by throwing lines they would catch fish.'
(17) Go'oto uubi-ro duu, pa'ea duu i-m-oroho-i=ka.
village person-NOM sago garden food PL.OBJ-CAUS-come-? $=\mathrm{HAB}$
'The village people would bring us sago and garden foods.'
(18) Burio gaa'u beha=ka Mapaio-ato, hio=ida mia i-tiodoai=ka year one only=DECL Mapaio-LOC quick=INST CONJ PL.OBJ-send=DECL
mia Maiperairu go'oto-i eito.
CONJ Maipenairu village-DET GOAL
'After just one year at Mapaio, we were sent from there to Maipenairu.'
(19) Aa'o go'oto-i ruи Mapaio-ato ireimo'a omo Pararoa. that village-dET 3SG Mapaio-LOC river.branch creek Panaroa 'That village is down the Panaroa river from Mapaio.'
(20) Purari ipi=da ireimo'a omo Pararoa ipi=da

Purari mid.piece=LOC river.branch creek Panaroa mid.piece=LOC
oo'a=ka, Maiperairu go'oto.
be=DECL Maipenairu village
'Maipenairu village is located on a branch of the Purari, the Panaroa.'
(21) $K a$ huru-i damara- $i=d a \quad o o^{\prime} a=k a$.

CONJ river.mouth-DET salt.water-DET=LOC be=DECL
'And it is where the river meets the sea.'
(22) Moo abea-i oma'ati om-ahoro-i=ka, mia moo sikuri $=d a$

1SG father-DET work CAUS-start-?=DECL CONJ 1SG school=LOC
ede'a-i=ka.
put-?=DECL
'My father started work and he also put me in school.'
(23) Aruhe obodi=ka, burio gaa'u didimo=ida.

Aruhe appear=DECL year one after=LOC
'Aruhe was born one year later.'
(24) Hio=ida tuutu emidio-umo bia, mabu piro-ra heamo-ra-i quick=INST long remain-PL.SBJ not because theft-CONJ fight-CONJ-DET
memiho $=k a$, aiha p-odau-dio-dio.
bad=DECL therefore D.PST-go-PROG-HAB
'We were not long there, because it was not safe because of stealing and fighting, and we had to flee.'
(25) $A a^{\prime} o$ ra-iri, duo ata-i aiha pi-r-o'u-mo.
that thing-PURP night other-DET therefore D.PST-1P-come-PL.SBJ
'Because that happened, we left the next night.'
(26) Raa~ra-i pee-i mame=ida i-oo'a, mapo=ida i-oo'a, ka thing $\sim$ RDUP-DET canoe-DET bow=LOC PST-be tail=LOC PST-be CONJ
i-r-oo'u-mo=ida himio-i-ro Pararoa ipi=da
PST-1P-come-PL.SBJ=LOC sun-DET-NOM Panaroa mid.piece=LOC
pi-r-imaho.
D.PST-1P-sunrise
'We put our luggage in the front and back of the canoe, and came away as the sun rose on us on the Panaroa River.'
(27) I-r-oo'u-mo=ida muba-i ma-r-omoa'e-mo-iri PST-1P-come-PL.SBJ=LOC headland-DET OBLG-1P-go.around-PL.SBJ-PURP pi-r-a'ai-mo, $k a$ rimo abea-i ruu idomai uro rautu=ka. D.PST-1P-do-PL.SBJ CONJ 1PL father-DET 3SG eye sleep with=DECL 'We were coming along and were about to round a bend of the river, and our father's eyes were very sleepy.'
(28) Ka-ida i-r-om-oa'e-umo=ida, pee-i aiha

CONJ-suddenly PST-1P-CAUS-turn-PL.SBJ=LOC canoe-DET therefore p-er-ehe'ei-dio, kiauka aiha pi-r-omuhobia-mo. D.PST-MID-turn.around-PROG okay therefore D.PST-1P-swamp-PL.SBJ 'Suddenly, just as we turned the corner the canoe overturned, and we capsized.'
(29) Ka tuutu ta-pi-r-oo'u-mo, Mapaio taitai hi'a=ida, kiauka CONJ long PF-D.PST-1P-come-PL.SBJ Mapaio near very=LOC okay omohubia-i=ka.
swamp-?=DECL
'We had already come a long way and were close to Mapaio, and that's where we sank.'
(30) $K a$ rimo raa~ra-i obo-i-ro aiha

CONJ 1PL thing $\sim$ RDUP-DET water-DET-NOM therefore
p-i-m-odau-dio, ka amii'a-i aiha
D.PST-PL.OBJ-CAUS-take-PROG CONJ some-DET therefore
p-io'иo-dio-umo.
D.PST-go.down-PROG-PL.SBJ
'The water carried off some of our things, and others sank.'
(31) Rimo turiaha mea-ha, ka pee-i odomoiai=ka, oo'u-iri.

1PL all good-FOC CONJ canoe-DET correct=DECL come-PURP
'We were alright, so we righted the canoe in order to continue.'
(32) I-r-oo'u-mo=ida Mapaio-ha-to pi-r-i-robu, ka

PST-1P-come-PL.SBJ=LOC Mapaio-FOC-LOC D.PST-1P-PL.MID-sleep/lie CONJ
himio ata-i pi-r-om-ahoro-umo oo'u-i,
day other-DET D.PST-1P-CAUS-Start-PL.SBJ come-?
$i$ ir-oo'u-mo Baimuru.
PL.OBJ-MID-come-PL.SBJ Baimuru
'We carried on but decided to sleep at Mapaio, and the next day we set out again and continued until we came to Baimuru.'
(33) Ka burio-i Baimuru-ha-to pi-r-opoi'o-umo, ka moo

CONJ year-DET Baimuru-FOC-LOC D.PST-1P-finish-PL.SBJ CONJ 1SG
sikuri rautu hioi=da pi-r-opoi'o.
school with quick=INST D.PST-1P-finish
'We finished the year at Baimuru, and I finished school there also.'
(34) Ka Baimuru ato pi-r-ar-aimai-mo go'oto-i Mia'ogoma-i. CONJ Baimuru LOC D.PST-1P-MID-return-PL.SBJ village-DET Meagoma-DET
'Then we returned from Baimuru to the village of Meagoma.'
(35) Moo abea-i mia oma'ati om-ahoro-i=ka.

1SG father-DET CONJ work CAUS-start-?=DECL
'Once again my father started working.'
(36) Moo-i-re Ru'aupo ka meree kee~ke-i sikuri 1SG-DET-CONJ Ru'aupo CONJ person small~RDUP-DET school om-ahoro- $i=k a$.

CAUS-start-?=DECL
'Ru'aupo and I and the little ones started school.'
(37) Ka riami’oi-re moo-i-re sikuri iara-i Kikori Hai CONJ younger.siblings-CONJ 1SG-DET-CONJ school last-DET Kikori High

Sikuri hioi=da pi-r-opoi'o-umo.
School quick=INST D.PST-1P-finish-PL.SBJ
'From there my younger siblings and I finished our last year of school at Kikori High School.'
(38) Do'ou rimo ararie.
today 1PL here
'Now we are here.'

## Text 2. The pig

Narrator: Mackenzy Aduma in 2017.
Written by Aduma Davi.
Village: Mira Goirami.
(1) Moo ao-ra aio-ra-i rautu odii=ka.

1SG father-CONJ mother-CONJ-DET with story=DECL 'A story about me, my father and my mother.'
(2) Tuesday 13 June 2008 himio=ida, ao-ra aio-ra-i-re Tuesday 13 June 2008 day=LOC father-CONJ mother-CONJ-DET-CONJ moo mabia-i rautu rimo himia tumu oomo-i eito 1SG older.sister-DET with 1PL REFL creek creek-DET GOAL pi-r-odau-mo. D.PST-1P-go-PL.SBJ
'On Tuesday 13 June 2008, Mum and Dad, with my elder sister and me, we took ourselves to the side creek.'
(3) Oomo-i paira-i=ka Pemoo.
creek-det name-det=decl Pemoo 'The creek is called Pemoo.'
(4) Aa'o himio-i tuia-i obo-i ihi p-oiro, ka that day-DET deep.water-DET water-DET liquid D.PST-come.up CONJ ihi-ro pi-r-i-m-aimai oomo-i mapo-i eito. liquid-NOM D.PST-1P-PL.OBJ-CAUS-return creek-DET tail-DET GOAL 'That day the deep water was coming up, and the water returned us to the end of the creek (= the tide carried us up the creek).'
(5) Ka boomo-i ihi mipa-i go'u-i i-a'ai=da, CONJ pig-DET liquid river.shallows-DET forage-DET PST-do=LOC
utu-i ma'iро-i-ro oторио-? = ka.
nipa-DET palm.leaf.base-DET-NOM tied.across-?=DECL
'(There was) a pig looking for something to eat in the river shallows that the nipa palm was tied across.'
(6) Kiauka utu-i mabu-i-ha-to p-uta'a, hia'e okay nipa-DET base-DET-FOC-LOC D.PST-lie.down go.downstream space tiato-iri.
none-PURP
'Ok, the pig lay down at the base of the nipa because there was no space to get out.'
(7) Ka rimo tumu oomo-i, Pemoo, aiha pi-r-odoro-umo odi CONJ 1PL creek creek-DET Pemoo therefore D.PST-1P-enter-PL.SBJ end hi'a-i, boomo-i i-orobu=ida aiha pi-r-ohodi-mo, very-DET pig-DET PST-sleep/lie=LOC therefore D.PST-1P-pass.by-PL.SBJ rimo ata uитоo bia ruи utu-i mabu=ida i-orobu-i. 1PL other know NEG 3SG nipa-DET base=LOC PST-sleep/lie-? 'We paddled to the very end of the bush creek, Pemoo, and we passed the sleeping pig, (but) we did not know he was sleeping at the base of the nipa.'
(8) $K a$ rimo oomo-i odi $=d a$ aiha pi-r-ohuи'o-mo. CONJ 1PL creek-DET end=LOC therefore D.PST-1P-go.downstream-PL.SBJ 'And we started to go out.'
(9) Kimai koти ata-ida guruи'o uho keehi ahurai=ka.
fishing.line short other=INST catfish.sp catfish small take=DECL 'We got a fish hook (we put it in the river), we caught one small fish.'
(10) Moo mabia-i-ro moo odu'ai=ka, "Moo ria-o, ara raa 1SG older.sister-DET-NOM 1SG tell=DECL 1SG brother-INTJ this fish keehi itai a'ai bia, ira-ha a'ai r-a'ai-ka-udo." small cook.one do NEG crab.basket-FOC do 1SBJ-FUT-PRES-DU 'My older sister told me, "My younger brother, we won't cook the fish, we can throw a crab basket."
(11) Moo-ro aa'o-i=ka, "Mea-ha=ka aara-o." 1SG-NOM say-?=DECL good-FOC=DECL sister-INTJ 'I said, "All right sister."'
(12) Ka ai-pi-r-ohuu'o-mo, ida meree ata mioo CONJ FOC-D.PST-1P-go.downstream-PL.SBJ suddenly person other call $a a^{\prime} o-i=k a$, moo abea-i-ro aa'o-i=ka, "Boo! rimo say-?=DECL 1SG father-DET-NOM say-?=DECL stop 1PL ohuи'o-итo didimo=ida meree ata mioo ire-i go.downstream-PL.SBJ after=LOC person other call that-DET m-aa'o." 2|3.IRR-say
'As we went out, suddenly someobody called out; my father said, "Stop! Someone is calling at the back."
(13) Ao-ro rimo $i$-odu'ai=ka, "Ra-i tumu-i meree ata-ro father-NOM 1PL PST-tell=DECL thing-DET creek-DET person other-NOM $a a^{\prime}$ o. "
say
'Father told us, "Our friend may be calling in the bush.""
(14) Boomo-i i-odudio matii puи'o gaa'u-ro p-om-urudio. pig-DET PST-be.inside place point one-NOM D.PST-CAUS-cover 'The place where the pig was sleeping was around one point in the river.'
(15) Ka rimo pиu'o-i i-r-omoaeeu-mo=ida, boomo-i

CONJ 1PL point-DET PST-1P-come.around-PL.SBJ-LOC pig-DET
i-aapo'ia buoi-ha pi-r-i-me'a-mo.
PL.OBJ-waves small-FOC D.PST-1SBJ-PL.OBJ-see-PL.SBJ
'And when we turned around the point, we saw the small waves (from the) pig.'
(16) Ida ao-ro aa'o-i=ka, "Boo! rimo hibaa." suddenly father-NOM say-?=DECL stop 1PL crocodile 'Then father said, "Stop! We (have) a crocodile.""
(17) Ida aio-ro p-aa'o, "Aa'a, uia-i=ka."
suddenly mother-NOM D.PST-say no cassowary-DET=DECL
'Then mother said, "No, it is a cassowary."'
(18) Ida pi-r-oibomai-mo taitai hi'a=da, abia, boomo
suddenly D.PST-1P-recognise-PL.SBJ near very=LOC no pig geeg $a=k a$.
big=DECL
'Then when we were very close, we realised, no, it was a big pig.'
(19) Kiauka ao-ro ibuo keehi=da, boomo-i utumo hi'a-i-ha
okay father-NOM axe small=INST pig-DET neck very-DET-FOC
p-u'uai, utumo-i horo-i i-m-ara'eai.
D.PST-chop neck-DET bone-DET PL.OBJ-CAUS-come.apart
'Ok, father took a small axe, and cut the back of the pig's neck; the neck bones broke/came apart.'
(20) Moo тaamu-i rautu ge'ii hete-i, pee-i rio=ida

1SG mother-DET with happy dance-DET canoe-DET inside=LOC
pi-r-a'ai-do.
D.PST-1P-do-DU.SBJ
'With my mother I did a happy dance inside the canoe.'
(21) Ka boomo-i aiha pi-r-oario-umo dodoro-i

CONJ pig-DET therefore D.PST-1P-go.ashore-PL.SBJ river.bank-DET
odabuai=ka.
join=DECL
'We took the pig ashore, to the high part of the river bank.'
(22) Pupuo-ito omia-i $=k a$, pee-i rio=da omia-i=ka. strong-GOAL put.in-?=DECL canoe-DET inside=LOC put.in-?=DECL 'It was heavy, and we struggled to put it in the canoe.'
(23) $K a$ ao-ro $a a^{\prime} o-i=k a$, "Rimo go'oto=ida ata uuho raa CONJ father-NOM say-?=DECL 1PL village=LOC other eat thing oo'a bia.
be not
'And father said, "We have nothing to eat in the village.'
(24) Ka Pai-dubu-i-ro r-i-m-a'ai ara raa geega-i." CONJ chief-man-DET-NOM 1 P-PL.BEN-BEN-do this thing big-DET 'And God has given us this big thing."
(25) Ka-iri keito aa'o-i r-a'ai-ka-umo.

CONJ-PURP thanks say-? 1SBJ-FUT-PRES-PL.SBJ
'And therefore we will give thanks.'
(26) Ao-ro Pai-dubu-i eito keito made aa'o-i=ka.
father-NOM chief-man-DET GOAL thanks word say-?=DECL
'Father said thanks to God.'
(27) Ka ge'ii rautu pi-r-ohuu'o-umo.

CONJ happy with D.PST-1 SBJ-go.downstream-PL.SBJ
'We returned with joy.'
(28) Ka moo mabia-i rautu aio-ro kaimai

CONJ 1SG older.sister-DET with mother-NOM nipa.decorations
tomio i-dodia-i mamai=ka i-r-oiodi-mo
decorations PL.OBJ-make-? both=DECL PST-1SBJ-go.back-PL.SBJ
hobo~hobo-i.
while~RDUP-DET
'My big sister and I, we dressed up traditionally while we were returning.'
(29)
$I$-r-om-iodii-mo $=i d a \quad p i-r-i-m$-ee'a-mo
PST-1P-CAUS-go.back-PL.SBJ=LOC D.PST-1P-PL.BEN-BEN-see-PL.SBJ
go'oto-i uubi-ro, "Oo, aire dubu-i meree-behe-ra
village-DET person-NOM oh that man-DET person-girl-CONJ
uиdo-ra-i kaimai tomio rautu i-m-ohuи'o.
son-CONJ-DET nipa.decoration decorations with PL.OBJ-CAUS-come.back
'When we returned, the village people saw us, "Oh, that man with his daughter and son are coming with decorations.'
(30) Abea-i-ro kimai=da, geega raa'o
father-DET-NOM fishing.line=INST big fish.sp
$a-m-i-m-e e^{\prime} u a-i$ ? "
Y.N-2|3.IRR-PL.OBJ-CAUS-hook.fish-?
'Maybe the father pulled a big fish, with a line?"'
(31) Ida p-oibomai-mo, "Abia, boomo geega
suddenly D.PST-recognise-PL.SBJ no pig big
om-iodii-kau-mo, ora'ei=da ahurai-maaka-umo. "
CAUS-go.back-PRES-PL.SBJ trap=LOC take-NR.PST-PL.SBJ
'Then they recognised (the pig), "No, maybe they are bringing back a big pig that was caught in a trap."
(32) Rimo-ro aa'o-i=ka, "Rimo boomo-i ao-ro ibuo=ida

1PL-NOM say-?=DECL 1PL pig-DET father-NOM axe=INST
$r$-i-m-ai'ia-maaka."
1P-PL.BEN-BEN-hit.to.kill-NR.PST
'We said "Our father killed the pig for us with the axe.""
(33) Baratei, tu-i rautu, Rev Gemo em-a'uuba-i=ka,
whole.arm hand-DET with Rev Gemo BEN-take.out-?=DECL
i-r-om-om-odau-mo, aiha pi-r-ema'ai-mo.
PST-1SBJ-BEN-CAUS-go-PL.SBJ therefore D.PST-1P-give-PL.SBJ
'The whole front leg and hoof (lit. arm with hand), we took it out for Rev.
Gemo; we carried it to him, then we gave it to him.'
(34) Ka-mia ruu-ro mori-ha pi-r-i-ma'ai.

CONJ-CONJ 3SG-NOM money-FOC PST-1SBJ-PL.BEN-give
'And so he gave us money.'
(35) Bia-i pi-r-emamaraibo-mo.

NEG-DET PST-1SBJ-oppose-PL.SBJ
'We stopped him; he didn't give it.'
(36) Kiauka, moo abea-i-ro boomo pahei ibuo=ida
okay 1SG father-DET-NOM pig small axe=inST
i-r-em-ai'ia odii-ro or-opoi'o.
PST-1P-BEN-hit.to.kill story-NOM MID-end
'Ok, the story about my father killing the pig with the small axe for us is finished.'

## Text 3. Visit to Bavi

Narrator: Gauvere Oroma, told in 2016.
Village: Ubuo.
Transcription and glossing help: Diana Aumarie.
Context: recording of a visit to the village of Bavi, a Kope village located downstream from Ubuo, just upstream from Meagoma and Gibi. The visit started two days before the time of narration, took place mostly on the prior day, and finished on the morning of the recording.
There are a large number of English words in this story. When these words had a distinct Kope pronunciation, they are written in Kope (yuti, sepika, diakoro), but when they sounded more like English, they are simply written as English words: five o'clock, dawn prayer, chairman, music.
(1) Tehata Saturday rimo ai-pi-r-ohu'o-umo Bavi, before.yesterday Saturday 1PL FOC-D.PST-1P-go.downstream-PL.SBJ Bavi
boubou-i ma-r-i-ma'ai-mo-iri Bavi.
thanksgiving.gift-DET OBLG-1P-PL.BEN-give-PL.SBJ-PURP Bavi
'Last Saturday we went downstream to Bavi to give a thanksgiving gift at Bavi.'
(2) Ka rimo i-r-odau-mo Bavi, pastor-ai moto-i rimo CONJ 1PL PL.MID-MID-go-PL.SBJ Bavi pastor-DET house-DET 1PL oodoi.
go.down
'We went to Bavi, down to the pastor's house.'
(3) Hiei=da rimo welcome a'ai-mo-i=ka.
there=LOC 1PL welcome do-PL.SBJ-?=DECL
'They welcomed us there.'
(4) Rimo i-r-idiai-mo, pastora-i moto-i goro

1PL PL.MID-MID-go.up-PL.SBJ pastor-DET house-DET under
emi'ei-tuti=ka.
sit-ITER=DECL
'We went up, under the pastor's house and sat down.'
(5) Bavi yuti i-odoi=ka rimo raa~ra-i

Bavi youth PST-go.down=DECL 1PL thing $\sim$ RDUP-DET
$i$-m-eidai $=k a$, $\quad i$-m-odau-mo Tiramu moto-i, ka PL.OBJ-CAUS-take=DECL PL.OBJ-CAUS-go-PL.SBJ Tiramu house-DET CONJ
$h i e i=d a \quad p-i-d e^{\prime} a-u m o$.
there=LOC D.PST-PL.OBJ-put-PL.SBJ
'The Bavi youth went down and got our things; they took them to Tiramu's house and put them there.'
(6) Rimo adimo-i ii-ho-i i-ma'ai-mo-i=ka,

1PL afternoon-DET PL.OBJ-eat-? PL.BEN-give-PL.SBJ-?=DECL
$i$-r-ii-ho-umo or-opoi'o-i, rimo-ro duu amii'a-i
PL.MID-MID-PL.OBJ-eat-PL.SBJ MID-end-DET 1PL-NOM food some-DET
$i-d e^{\prime} a-i=k a$.
PL.OBJ-put-?=DECL
'That afternoon they gave us our food; we finished eating and left some food.'
(7) Rimo irudeme-i eito i-odoi, adimo-i iruudemea- $i$, 1PL prayer-DET to PST-go.down afternoon-DET pray-DET
adimo-i i-r-irudemea-umo, or-opoi'o-i i-idiai $=k a \quad$ rimo
afternoon-DET PL.MID-MID-pray-PL.SBJ MID-end-? PST-go.up=DECL 1PL
$u t a^{\prime} a-u t i=k a$.
lie.down-ITER=DECL
'We went down for fellowship, afternoon fellowship; we had afternoon fellowship and when it finished we went up to sleep.'
(8) Ra'ati, ruu hiiro $=k a$, hiiro ra'ati $=k a$ !
mosquito 3 SG many=DECL many mosquito=DECL
'There were lots of mosquitoes!'
(9) Ohio-bai'o-i-re buhebai'o, rimo abea-i, Pastora-i uro boy-group-DET-CONJ girls 1PL father-DET pastor-DET sleep orobu bia.
sleep/lie NEG
'The boys and girls and our father, the pastor, they didn't sleep.'
(10) Rimo reto'a tairamu beha pi-r-i-m-odau-mo=ka.

1PL two mosquito.net only D.PST-1P-PL.OBJ-CAUS-go-PL.SBJ=DECL
'We had only taken two mosquito nets.'
(11) $H i e i=d a \quad$ rii mea uro-i $i$-robu there=LOC PL.MID-sleep/lie-?=DECL 3PL good sleep-DET PL.MID-sleep/lie
bia, ra'ati hiiro-iri, aiha p-oroi'io-umo.
NEG mosquito many-PURP therefore D.PST-life-PL.SBJ
'We slept there, (but) they didn't sleep because there were too many mosquitoes; they stayed awake.'
(12) Kiauka duoduo-i five o'clock i-odoi-mo-i=ka dawn
okay morning-DET five o'clock PST-go.down-PL.SBJ-?=DECL dawn prayera-i eito.
prayer-DET GOAL
'At five o'clock in the morning, we went down for dawn prayer.'
(13) Dawn prayer i-r-a'ai-du-umo, duoduo-i or-opoi'o-i=ka, dawn prayer PL.MID-MID-do-INT.PST-PL.SBJ morning-DET MID-end-?=DECL
kiauka i-idiai=ka obo-i r-oruo-du-umo.
okay PST-go.up=DECL water-DET 1P-go.down-INT.PST-PL.SBJ
'We had dawn prayer; we finished in the morning; from there we went up to wash.'
(14) Irudemea-i geega-i eito, irudemea-i, r-er-emaumodi-duu-mo, pray-DET big-DET GOAL pray-DET 1P-MID-prepare-NR.PST-PL.SBJ
duoduo-i duu-i ii-ho-i.
morning-DET food-DET PL.OBJ-eat-?
'We went up for the church service (lit. big prayer); as we were getting ready, we had breakfast (lit. ate morning food).'
(15) Kiauka bero-i-ha-ro aa'o.
okay bell-DET-FOC-NOM say
'Then the bell rang.'
(16) Rimo obo-i r-oru'o-du-umo.

1PL water-DET 1P-go.down-NR.PST-PL.SBJ
'We washed.'
(17) Ata bero-i aa'o-i=ka, rimo i-odoi=ka, gido gido other bell-DET say-?=DECL 1PL PST-go.down=DECL song~RDUP om-ahoro- $i=k a$, gido $\sim$ gido i-r-a'ai-du-umo, or-opoi'o-i. CAUS-start-?=DECL song~RDUP PL.MID-MID-do-INT.PST-PL.SBJ MID-finish-? 'The bell rang again, and we walked down, and the singing started; we were singing until it finished.'
(18) Irudemea-i ododia-i=ka, Pastora-i-ro aa'o-i=ka, "Meree pray-DET make-?=DECL Pastor-DET-NOM say-?=DECL person
kee~ke-i, obo=ida, epu-i idi'aamo-i a'ai-ka-umo, erara small $\sim$ RDUP-DET water=INST head-DET put(?)-PL.SBJ FUT-PRS-PL.SBJ bless
i-ma'ai a'ai-ka-umo, beibi-oi.,"
PL.BEN-give FUT-PRS-PL.SBJ baby-group
'When we started our service (lit. prayer), the pastor said, "We will baptise the children with water on their heads; we will give the babies a blessing."
(19) Ka beibi-oi, moo meree-i, tiri, reto'a meree-behe, meree-hio CONJ baby-group 1SG child-DET three two person-girl person-boy gaa'u, ka moo meree-hio-i meree-i, beibi, ruu rautu one CONJ 1SG person-boy-DET child-DET baby 3SG with $i$-aadoi=ka.
PST-go.down=DECL
'(All) the small children, (also) my three children, two girls and a baby boy, went down with him.'
(20) Ka rii epu-i obo-i idi'aamoi=ka, Remeremi

CONJ 3PL head-DET water-DET spiritual.baptism=DECL Reverend Magege-ro.
Magege-NOM
'And Reverend Magege baptised them with water on their head.'
(21) Hiei $=d a$ or-opoi'o-i , i-r-oo'и-du-umo emi'ei-tuti=ka,
there=LOC MID-end-? PL.MID-MID-come-INT.PST-PL.SBJ sit-DIST=DECL
irudemea-i.
pray-?
'When that was finished, we went (back) and sat down to pray.'
(22) I-odau aiha or-opoi'o-i rimo i-o'uo-i=ka; rimo

PST-go therefore MID-end-? 1PL PST-go.down-?=DECL 1PL
$i$-r-odau-du-umo moto- $i$.
PL.MID-MID-go-INT.PST-PL.SBJ house-DET
'When we finished praying we went down (the steps of the hall) and went to the house.'
(23) Bavi chairman-i-ro $a a^{\prime} o-i=k a$, "Om-oti-bu'a-umo

Bavi chairman-DET-NOM say-?=DECL CAUS-stand-small.amount-PL.SBJ
duu-i m-ii-to-kaame."
food-DET 2|3.IRR-PL.OBJ-cook.many-NR.PST.IRR.PL.SBJ
'The chairman of the Bavi (congregation) said, "Wait a little while, they might already be cooking.""
(24) Rimo i-r-om-oti-du-umo,
rimo-ro
1PL PL.MID-MID-CAUS-stand-INT.PST-PL.SBJ 1PL-NOM
$r$-odau-du-umo.
1P-go-INT.PST-PL.SBJ
'We waited and then we went.'
(25) Bavi odi hooho-i, pariki emi'ei-tuti=ka.

Bavi end face-DET rest.house sit-DIST=DECL
'At the end of Bavi village, they sat down in the longhouse.'
(26) Hiei=da mori i-r-i-dabuai-du-umo Bavi,
there=LOC money PL.MID-MID-PL.OBJ-gather-INT.PST-PL.SBJ Bavi
Bavi-o mori i-r-i-m-odabuai-du-umo, aiha
Bavi-INTJ money PL.MID-MID-PL.OBJ-BEN-gather-INT.PST-PL.SBJ therefore
odau, 800 i-ororo hi'a-i.
go 800 PST-mark.of very-DET
'There we gathered money, we donated money for (the people of) Bavi, it went up past the mark of 800 kina.'
(27) Kiauka, rimo-ro hiei=da i-r-eibua-i=ka, rimo iha
okay 1PL-NOM there=LOC PL.MID-MID-get.up-?=DECL 1PL really
ge'iii r-a'ai-du-umo.
happy 1P-do-INT.PST-PL.SBJ
'Then we got up; we were very happy.'
(28) Rii mori i-r-i-m-odabuai-du-umo=ida,

3pL money PL.MID-MID-PL.BEN-BEN-gather-INT.PST-PL.SBJ=LOC
'When they helped us gather the money,'
(29) kiauka, rimo odau-dio- $i=k a$, rimo $i$-r-odau-du-umo, okay 1PL go-PROG-?=DECL 1PL PL.MID-MID-go-INT.PST-PL.SBJ
rii-ro $a a^{\prime} o-i=k a$, "Bero- $i \quad a-m-a a^{\prime} o \quad$ turiaha ita
3PL-NOM say-?=DECL bell-DET Y.N-2|3.IRR-say all must
i-oтohu'o-umo, ohio-bai'o-i-ro sepika-i
PL.OBJ-bring.out-PL.SBJ boy-group-DET-NOM speaker-DET
m-odau-du-umo."
2|3.IRR-go-IRR-PL.SBJ
'we were going away and as we went they said, "When the bell rings, you all can go up; the boys should take the speakers.""
(30) Hито-i pariki re'ei i-de'a-i=ka, pariki, hooho-i, river.mouth-DET rest.house place PL.OBJ-put-?=DECL rest.house face-DET hiei $=d a, \quad$ raa $\sim r a-i$-roru'и-du-ито kaire. there=LOC thing $\sim$ RDUP-DET PL.OBJ-connect-INT.PST-PL.SBJ okay
'They put the speakers at the river mouth rest house, in front of the rest house; they connected the speakers.'
(31) Rimo bero-i aa'o-i kiauka, ka rii i-mohu'o-i=ka, rimo

1PL bell-DET say-? okay CONJ 3PL PL.OBJ-bring.out-?=DECL 1PL
r-odau-du-umo emi'ei-tuti=ka, ka program rii-ro
1P-go-INT.PST-PL.SBJ sit-DIST=DECL CONJ program 3PL-NOM
om-ahoro- $i=k a$.
CAUS-start-?=DECL
'The bell rang and then they went down, and we each sat down, and they started the programme.'
(32) Music- $i \quad e d e ' a-i=k a$, gospel music- $i$, $k a$ rimo hete- $i=k a$, music-DET put-?=DECL gospel music-DET CONJ 1PL dance-DET=DECL
rimo hete-i r-a'ai-du-umo, ge'ii hete, i-or-opoi'o-i,
1PL dance-DET 1P-do-INT.PST-PL.SBJ happy dance PST-MID-finish-?
kiauka rimo-ro, rimo, diakoro-i-ro aa'o-i=ka, "Rimo om-oti
okay 1PL-NOM 1PL deacon-DET-NOM say-?=DECL 1PL CAUS-stand a'ai bia."

FUT NEG
'They put on music, gospel music, and we danced and danced; it was joyful dancing; when it was finished, our deacon said, "We will not wait."
(33) Ruи pastora-i rautu aa'o-i-do-i=ka, "Rimo om-oti a'ai bia,

3SG pastor-DET with say-?-DU-?=DECL 1PL CAUS-stand FUT NEG
mabu obo-i ai-oiro.
because water-DET FOC-come.up
'He and the pastor said, "We will not wait because the tide is coming in.'
(34) Rimo, ruru gaa'u oabu-i r-a'ai=ka, teiboro=ida

1PL envelope one take.across-? 1P-FUT=DECL table=LOC
$r$-ede'a-du-umo.
1P-put-IRR-PL.SBJ
'We will take one envelope across (to the front) and put it on the table.'
(35) Ka omoabai ubii oo'u-i a'ai-ka-umo, kamia mori CONJ help people come-? FUT-PRES-PL.SBJ CONJ money gaa'u~gaa'и m-i-omia-uti-du-umo."
one $\sim$ RDUP $\quad 2 \mid 3 . I R R-P L . O B J-p u t . i n-I T E R-I R R-P L . S B J ~$
'The helping people will come and each one will put in some money."'
(36) Kiauka, $i-a h o^{\prime} o-i=k a$ rimo, rimo music-i ede'a-umo- $i=k a$, okay PST-call-?=DECL 1PL 1PL music-DET put-PL.SBJ-?=DECL gospel music-i.
gospecl music-DET
'So they called us, and we put on music, gospel music.'
(37) Kiauka hete-i rautu turiaha hiiro uubi-ro r-odau-du-umo, okay dance-DET with all many person-NOM 1P-go-INT.PST-PL.SBJ
mori $r$-oabu-du-umo, hetei ra'oo rimo, ge'ii
money 1P-take.across-INT.PST-PL.SBJ dancing.any.kind.of.way 1PL happy
hi'a-i r-a'ai-du-umo.
very-DET 1SBJ-do-INT.PST-PL.SBJ
'Then all of us started dancing and we went and took the money across, all of us dancing; we were very happy.'
(38) Rimo r-odau-du-umo mori ede'a-i=ka, kiauka, rimo

1PL 1P-go-INT.PST-PL.SBJ money put-?=DECL okay 1PL
$i$-r-aimai $=k a \quad$ hete- $i \quad$ rautu.
PL.MID-MID-return=DECL dance-DET with
'We went and put the money (on the table), we went back dancing.'
(39) Aa'o-i=ka, Bavi himio-i=ka, rii rio-ra, rii himia mori, that-DET=DECL Bavi day-DET=DECL 3PL inside-Q 3PL REFL money oomotoi, rii-ro oabu-i a'ai=ka.
increase 3PL-NOM take.across-? FUT=DECL
'Then, when the time for the Bavi people (has come), they themselves can look after it, if they want to, and the money will increase.'
(40) Rii chairman-i-ro oabu-i=ka, mori mea aiha ede'a,

3PL chairman-DET-NOM take.across-?=DECL money good therefore put rii odau-mo-i=ka, i-om(ia)-uti-du-umo kaire.
3PL go-PL.SBJ-?=DECL PL.OBJ-put.in-ITER-INT.PST-PL.SBJ okay
'Their chairman took money and put it (on the table), and others (lit. they) went and put money in.'
(41) Rimo i-r-i-om(ia)-uti-du-umo himia box-i=ka,

1PL PL.MID-MID-PL.OBJ-put.in-ITER-INT.PST-PL.SBJ REFL box-DET=DECL rii himia box-i=ka.
3PL REFL box-DET=DECL
'We put money in our own box, and they put it in their own box.'
(42) Kiauka, rii-ro i-dabuai-mo-?=ka.
okay 3PL-NOM PL.OBJ-gather-PL.SBJ-?=DECL
'Then they put it (lit. them) together.'
(43) Aa, magistrata-i-ro aa'o-i=ka, "Ri'o hio~hio m-a'ai, rimo INTJ magistrate-DET-NOM say-?=DECL 2PL quick~RDUP 2|3.IRR-do 1PL
obo-i ai-oiro, rimo duu bobo=ka, rimo duu-i
water-DET FOC-come.up 1PL food hole=DECL 1PL food-DET
ma-r-i-ma'ai-mo."
OBLG-1P-PL.BEN-give-PL.SBJ
'Then (our) magistrate said, "You people hurry up; the tide is coming in; we are hungry; you should give us food.""
(44) Ka, rii-ro aa'o-i=ka, "Ka ri'o odoro-i a'ai bia."

CONJ 3PL-NOM say-?=DECL CONJ 2PL go.upstream-DET FUT NEG
'And they said, "You won't go.""
(45) Rimo-ra aibo-i r-ohu'o-umo ri'o aa'o emera-i

1PL-Q similar-DET 1P-go.downstream-PL.SBJ 2PL that way-DET
odoro-i a'ai-ka-umo.
go.upstream-? FUT-PRES-PL.SBJ
'How we came to Bavi, that is how you are going to go back.'
(46) I-r-om-oti-du-umo, rii-ro aa'o-i=ka, "Okay," Bavi

PL.MID-MID-CAUS-stand-INT.PST-PL.SBJ 3PL-NOM say-?=DECL okay Bavi
oroa'oi=ka, "Ri'o iou-mo, ri'o duu-i grupi=da.
say=DECL 2PL climb-PL.SBJ 2PL food-DET group=LOC
'We waited; they said, "Okay"; (the people of) Bavi said, "Okay, you people come up; your food is in groups.'
(47) Ta-r-i-m-ede'a-umo-maaka-umo."

PF-1P-PL.BEN-BEN-put-PL.SBJ-NR.PST-PL.SBJ
'We already put the food in the groups for you."'
(48) Rimo Pastora-i paira=ida himia duu=ka, hiiro duu 1PL pastor-DET name=INST REFL food=DECL many food $r$-i-m-ede'a-du-umo rimo, teacher-ai rautu. 1P-PL.BEN-BEN-put-INT.PST-PL.SBJ 1PL teacher-DET with 'Our food was under the pastor's name; they gave us lots of food, and also to the teacher (who was with us).'
(49) Men's fellowship-i himia i-m-ede'a-du-umo, men's fellowship-DET REFL PL.BEN-BEN-put-INT.PST-PL.SBJ women's fellowship-i himia, yuti himia, ka ibai women's fellowship-DET REFL youth REFL CONJ like.that r-i-ma'a-ti-du-umo, 1SBJ-PL.BEN-give-ITER-INT.PST-PL.SBJ
$r$-i-m-ede'a-то-dи-ито duи-i, grupi=da.
1P-PL.BEN-BEN-put-PL.SBJ-INT.PST-PL.SBJ food-DET group=LOC
'They put (the food for) the men's fellowship by itself, (the food for) the women's fellowship by itself, (for the) youth by itself; that is how they put the food, in groups.'
(50) Ka emi'ei-tuti=ka, rimo duu-i re'ei=da, duu-i CONJ sit-DIST=DECL 1PL food-DET place=LOC food-DET r-ii-ho-du-umo, rii mori i-aho'o-uti-du-umo 1P-PL.OBJ-eat-INT.PST-PL.SBJ 3PL money PL.OBJ-call-ITER-INT.PST-PL.SBJ kaire.
okay
'So we all sat down at the places where they had put our food (lit. in our food places), and we ate the food, while they were counting the money.'
(51) Rimo duи-i er-ema'a-ti-du-umo, тати-i-'oi

1PL food-DET MID-give-ITER-INT.PST-PL.SBJ mother-DET-group
ii-ho- $i \quad$ odau-dio-umo- $i=k a$.
PL.OBJ-eat-? go-PROG-PL.SBJ-?=DECL
'They were sharing the food, and the women (lit. mothers) went to eat (later, each in their own time).'
(52) Rimo i-r-om-oti-du-umo, rii-ro aa'o-i=ka, "Okay, 1PL PL-MID-CAUS-stand-INT.PST-PL.SBJ 3PL-NOM say-?=DECL okay boubou-i ita or-omidio-umo, ri'o thanksgiving.gift-DET must MID-hear-PL.SBJ 2PL
$i$-m-i-de'a-umo mori namba-i ta-r-omidio-umo." PL.BEN-BEN-PL.OBJ-put-PL.SBJ money number-DET PF-1P-hear-PL.SBJ
'As we were waiting, they said, "Okay, listen to the (amount of the) thanksgiving gift, listen to the money that you people gave."
(53) Turiaha $i$-dabuai-mo- $i=k a \quad a a^{\prime} o-i=k a$, "Okay,
all PL.OBJ-gather-PL.SBJ-?=DECL say-?=DECL okay
r-i-ma'ai-ka-umo Bavi-o rimo-ro 1021 kina."
1P-PL.BEN-give-PRS-PL.SBJ Bavi-INTJ 1PL-NOM 1021 kina
'They put the money together and said, "Okay, we are giving to Bavi 1,021
kina."
(54) Kiauka, rimo ge'ii r-aa'o, rimo r-a'ai=ka, oo, rimo pupuo $=k a$, okay 1PL happy 1P-say 1PL 1P-do=DECL oh 1PL strong=DECL
ta-r-i-ma'ai-maaka mori, ohu=ka rimo.
PF-1P-PL.BEN-give-NR.PST money on.top=DECL 1PL
'Then we were very happy; oh, we felt so strong (that) we had given (so much) money; we had given the most (lit. we were on top).'
(55) Irai Bavi, Bavi chief-i-ro aa'o-i=ka, "Aa, Bavi, maamu=ka. but Bavi Bavi chief-DET-NOM say-?=DECL ah Bavi mother=DECL 'But the chief of Bavi said, "Ah, (but) Bavi is the mother.'
(56) Ubuo rii meree- $i=k a$, $k a$ Bavi meree- $i=k a$, $k a$ modobo Ubuo 3PL child-DET=DECL CONJ Bavi child-DET=DECL CONJ able bia Ubuo-ha-ro oo'u-i ho'u-i Bavi-ro ma-oo'и-i mabu NEG Ubuo-FOC-NOM come-? top-DET Bavi-NOM OBLG-come-? because таати- $=k a \quad$ Bavi."
mother-DET=DECL Bavi
'Ubuo is their child, it is Bavi's child; (so) it is not really good that Ubuo comes first. Bavi is the mother, so Bavi should come first."
(57) Rimo-ro $a a^{\prime} o-i=k a$, "Kiauka, reiti ta-ii'ii-maaka, rimo ho'u=ka." 1PL-NOM say-?=DECL okay late PF-grow-NR.PST 1PL top=DECL 'We said, "Fine, it is already late, we are on top (with our giving).""
(58) $K a$, rimo odai $=k a$, duu-i, r-ii-ho-du-umo rii-ro CONJ 1PL go=DECL food-DET 1P-PL.OBJ-eat-INT.PST-PL.SBJ 3PL-NOM $a a^{\prime} о-i=k a$, "Keito $=k a$, mea-ha=ka rimo iraromo say-?=DECL thanks=DECL good-FOC=DECL 1PL thought r-i-ma'ai-ka-umo. "
1P-PL.BEN-give-PRES-PL.SBJ
'And we went and ate, and then they said, "Thank you, you are giving us good things to think about."
(59) Kiauka, hioi=da rii mori eidai=ka.
okay quick=LOC 3PL money take=DECL
'Then quickly they got their money.'
(60) Rimo duu-i r-ii-ho-du-umo, go'oto-i meree-i,

1PL food-DET 1P-PL.OBJ-eat-INT.PST-PL.SBJ village-DET person-DET
kiauka rii oo'u-i om-ahoro-i=ka, go'oto-i eito.
okay 3PL come-? CAUS-start-?=DECL village-DET GOAL
'When we had eaten our food, the village people started to go (lit. come) back to the village.'
(61) Rimo didimo-i r-oo'u-du-umo, ario-i=ka, raa~ra-i

1PL after-DET 1P-come-INT.PST-PL.SBJ arrive-?=DECL thing~RDUP-DET $i$-m-idiai-du-umo, tara moto- $i \quad i-d e^{\prime} a-i=k a$. PL.OBJ-CAUS-go.up-INT.PST-PL.SBJ holy house-DET PL.OBJ-put-?=DECL 'We went and brought up our things and put them in the church (lit. holy house).'
(62) Rimo oo'u-i=ka moto-i, ii-ho-i ria'ei aiha

1PL come-?=DECL house-DET PL.OBJ-eat-? leftovers therefore
r-i-mo'u-du-umo rimo.
1P-PL.OBJ-pass.nearby-INT.PST-PL.SBJ 1PL
'We went to the house and brought all the leftover food along.'
(63) Ka duo-i ohio-bai'o-i r-i-ma'ai-maaka-umo, mariota,

CONJ night-DET boy-group-DET 1P-PL.OBJ-give-NR.PST-PL.SBJ cassava
pari ata.
saucepan other
'In the night, we gave a pot with cassava to the boys.'
(64) Ka, hiei=da or-opoi'o, bavi ta-i-r-ohu'o-du-umo

CONJ there=LOC MID-end Bavi PF-PL-MID-go.down-INT.PST-PL.SBJ
odii=ka. Keito=ka.
story=DECL thanks=DECL
'And here it ends, the story of going out to Bavi. Thank you.'

# Part III <br> Kope discourse 

by Robert Petterson

The following abbreviations are used in this chapter.

| Adv | Adverb(ial) |
| :--- | :--- |
| Tns | Tense |
| Psn | Person |
| Num | Number |
| Conj | Conjunction |

## 11. Options in Kope narrative discourse

This paper explores and reports on some of the strategies used in Kope for connecting the clauses of a past tense narrative together to make a coherent whole. This exploration has been carried out by progressively looking through several stories, and examining in detail the use of various options in each, in order to build up an understanding of those strategies. The options examined include conjunctions, preverbal adverbs, the nominalisation of verbs, and tense, person, and participant number marking options on verbs.

Kope verb morphology has been described by Hanna Schultz (2018, and this volume), and in her description she has catalogued various prefixes, suffixes and clitics used with verbs, and proposed three broad categories of clause (primary, secondary, and subordinate). She acknowledges that the selection and combination of tense, person, and participant number marking on verbs seem to be dependent on discourse considerations, as are the functions of various homonymic particles and affixes, especially those with the form $i$ and $k a$, and she notes the need for a discourse study of the patterns of clause use in order to understand "why each clause type is used, how they relate to each other in an extended narrative" (Schulz 2018:111). This paper is a response to that need - a summary of the various verb-marking configurations discovered and their discourse functions can be found at the end of this chapter.

### 11.1 The morphemes of interest

Before starting the analysis I will briefly list, as a reference, the types of morphemes and their options that I will focus on, most of which Schulz has already discussed in detail in part II of this volume. In order to obtain a complete picture of the options provided in the relevant paradigms, I have additionally made overt a few zero morphemes. For ease of discussion I also tag some of the homonymic morphemes with the following subscript letters: t for tense, p for person, n for number, m for middle voice (i.e. reflexive), c for causative, d for declarative.

The morpheme lists follow. (Note that some of them start with a variable vowel, indicated by $V$, being the initial vowel of the root or stem.)
a. Clause-initial conjunctions:

| hieida | 'at that, there, thence; at or from the place or time talked about' |
| :--- | :--- |
| ida | 'suddenly' |
| kaa | 'and' |
| kiauka | 'done with that, okay, enough said' |
| mia | 'at the same time' |

b. Special adverbs or adverbial prefixes:

| aiha | 'lo, indeed, actually' (possibly derived from the verb root a'ai <br> 'do' + ha 'adverbaliser') |
| :--- | :--- |
| ai- | focus (FOC) (a contraction of aiha) |
| tauo | 'already, earlier' |
| ta- | perfect (PERF) (a contraction of tauo) |

c. Tense:

| $p(i)-$ | distant past (D.PST) (before yesterday) ${ }^{1}$ |
| :--- | :--- |
| $i_{t^{-}}$ | general past (PST) (before the present) |
| $\varnothing_{\mathrm{t}^{-}}$ | recent past (REC) (including intermediate past, near past and <br> present tenses, but not the distant past). Note that some of these <br> tenses are also separately marked by suffixes $-d u$ and -maka. |
| $-d u$ | intermediate past (INT.PST) (non-singular subject) |
| $-m a k a$ | near past (NR.PST) (this morning) |
| $-i$ | tenseless - an article (DET) that nominalises verb stems |

[^0]d. Person marking:

| $m_{p^{-}}$ | second and third person irrealis (2\|3.IRR). Note that care is <br> needed to differentiate this from valency-changing prefixes <br>  <br> $V m_{b^{-}}$and $V m_{c^{-}}$. |
| :--- | :--- |
| $r_{p^{-}}$ |  |$\quad$| first person involvement (1P) (whether realis or irrealis). Note |
| :--- |
| that care is needed to differentiate this from the valency- |
| changing prefix $V r_{m^{-}}$. |

e. Participant number:

| $i_{n^{-}}$ | "one at a time" plural absolutive (PL.ABS) ${ }^{3}$ |
| :--- | :--- |
| $\varnothing_{n^{-}}$ | singular absolutive (SG.ABS) |
| $-(u) m o$ | plural subject (PL.SBJ) |
| $-(i) d o$ | dual subject (DU.SBJ) |
| $-\varnothing_{n}$ | singular subject (SG.SBJ) |

f. Valency changing prefixes (for value of $V$ see Schulz, this volume, $\S 9$ ):

```
Vm}\mp@subsup{b}{}{-}\quad\mathrm{ beneficiary (BEN)
Vm\mp@subsup{c}{}{-}}\quad\mathrm{ causative (CAUS)
V\mp@subsup{r}{m}{-}
```

g. Clitics and particles:

```
=bia 'not'
=(i)da locative (LOC)
=ka declarative (DECL)
=ri reason (RSN)
```

From the perspective of morpheme shapes, of particular interests are two with multiple homonyms that are potential sources of confusion:

[^1]The morpheme $i$ :
$i_{t^{-}} \quad$ general past tense (PST) comes as the first element of a verb, before the person marker;
$i_{n}{ }^{-} \quad$ plural absolutive (PL.ABS) comes after the person marker;
$-i \quad$ determiner (DET) comes after the verb, and before the clitics;
$i$ - deictic (DEI) is the first element of some adverbs and conjunctions or adverbs, namely $i$-re 'there (nearby)', $i-r i$ 'for that reason', $i$-da 'suddenly' (lit. 'at that'), i-rai 'but' (probably lit. 'the thing (is)'); may be related to the general past tense marker on verbs.

The morpheme $k a$ :
$k a \quad$ conjunction 'and/then' (which I write kaa because it nearly always has a long vowel) comes at the beginning of a clause;
$=k a_{d}$ the clause-final declarative clitic (DECL); it is also a device used "to move the story from event to event in an efficient manner" (Schulz this volume: §3.3.3);
$-k a_{t} \quad$ present and near-past tense-related suffix (PRS) comes after the verb stem.

The order of the morphemes associated with the verb that are applicable to this paper are shown in Table 29, adapted from Schulz's Tables 23-25 in Appendix 1 to Part II of this volume, with addition of some overt zero morphemes.

TABLE 29. ORDER OF MORPHEMES OF INTEREST ASSOCIATED WITH VERBS

| Adv | Tense <br> (1) | Person | Number (ABS) | Stem | Tense <br> (2) | Number (SBJ) | Det | Clitics |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| tauo <br> 'already' <br> ta- 'PERF' <br> aiha 'lo!' <br> ai- 'FOC' | $\begin{array}{\|l\|} \hline p-\quad \text { 'D.PST' } \\ i_{-} \text {' } \mathrm{PST}^{\prime} \\ \emptyset_{t^{-}} \text {' 'REC' } \end{array}$ |  | $\begin{aligned} & i_{n^{-}} \\ & \text {'PL.ABS' } \\ & \emptyset_{n^{-}} \\ & \text {'SG.ABS' } \end{aligned}$ | $\begin{aligned} & r_{m}-, m_{b} \text {-, } \\ & m_{c} \text {-, < root> } \\ & \text {-uti ‘ITER’ } \\ & \text {-dio } \\ & \text { ‘PROG', } \\ & \text { (etc) } \end{aligned}$ |  | $\begin{aligned} & -u m o_{n} \\ & \text { 'PL.SBJ' } \\ & -i d o_{n} \\ & \text { ‘DU.SBJ' } \\ & -\varnothing_{n} \\ & \text { ‘'SG.SBJ' } \end{aligned}$ | $\begin{aligned} & -i \\ & \text { ' } \mathrm{DET} \text { ' } \end{aligned}$ | $\begin{aligned} & =k a_{d} \text { ' } \mathrm{DECL} \text { ' } \\ & =d a \text { ' } \mathrm{LOC} \text { ' } \\ & =r i{ }^{\prime} \mathrm{RSN} \text { ' } \\ & =b i a \quad \text { 'NEG' } \end{aligned}$ |

To carry out this explorative study I studied four texts, the results of which are presented in this chapter. I first look at how these various markings are used in a simple short past-tense narrative, with as few complications as possible. The story selected is "The Big Snake" (text 4). The analysis of this story is then checked
against, and extended by, progressively three more complicated stories, namely "The Pig" (text 2), "Personal Experience" (text 1), and "Visit to Bavi" (text 3). Interlinear glossed and translated versions of texts 1,2 and 3 can be found in Appendix 2 in Part II of this volume. The full interlinear glossed analysis of text 4 is presented in the appendix to this discourse chapter, part III of this volume.

The reader may make use of the list of morphemes above when examining the charted texts presented in this paper, as I have not glossed them there in the interest of keeping the charts uncluttered. A summary of the discourse functions of most of these morphemes can also be found in $\S 11.8$.

### 11.2 Discourse analysis of text 4 'The Big Snake'

Text 4, "The Big Snake", is a short written personal experience story of ten sentences that was drafted, reviewed, and re-written as a piece of literature. ${ }^{4}$ It contains a singular protagonist, a singular antagonist, and a single climax with a simple build-up and resolution.

The key events are charted clause-by-clause (summarised in rather literal and simplified English translations) in Table 30, along with the Kope morphemes that have proved the most relevant to the discourse analysis of this story. The events are grouped under sub-headings that show the structure of the narrative. Subordinate clauses are encased in square brackets, and this is also reflected in the English translation. Blocks of $p$ - 'D.PST' prefixes and $-i=k a_{d}$ 'DET=DECL' suffixes are boxed with bold lines, as they are particularly interesting. (To minimise clutter, glosses are not given in this and subsequent charts. See $\S 11.1$ for senses of the affixes, and the sense of each verb is obtainable from the English event summary in the same line of the chart.)

Table 30. Structure of text 4 "The Big Snake"

|  | Conj | Event | Adv | Tns | Psn | Stem | Suffix |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | Setting - Start |  |  |  |  |  |
| 1a | It was very recent. |  |  |  | (no verb) | $-i=k a_{d}$ |  |
|  | Lead-up to climax |  |  |  |  |  |  |
| 1b | I came back from V. |  | $p-$ | $r_{p^{-}}$ | $o o{ }^{\prime} u$ | $-\varnothing_{n}$ |  |

[^2]|  | Conj | Event | Adv | Tns | Psn | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Details of lead-up |  |  |  |  |  |
| 2a |  | I cut through the passage. |  |  |  | ahiai | $-i=k a_{d}$ |
| 2b |  | I came out on the V side of the river. |  |  |  | ohuu'odidio | $-i=k a_{d}$ |
| 3a |  | To cross the open water to the M side, |  |  |  | aabu | -i |
| 3b |  | I started. |  |  |  | omahoro | $-i=k a_{d}$ |
|  |  | Pre-climax event |  |  |  |  |  |
| 4a |  | To cross, |  |  |  | aabu | -i |
| 4b |  | I started, |  |  |  | omahoro | $-i=k a_{d}$ |
| 4 c |  | until I came to the middle, |  | $i_{i^{-}}$ | $r_{p^{-}}$ | oo'u | - $\varnothing_{n}$ |
|  |  | Climax |  |  |  |  |  |
| 4d |  | when, hey! a big snake rose up. | aiha | $p$ - | $\chi_{p^{-}}$ | eibua | $-\varnothing_{n}$ |
| 5a | hieida | At that I prayed |  |  |  | atohetai | $-i=k a_{d}$ |
| 5b |  | "My life (is) in your hands!" |  |  |  | (no verb) | $=k a_{d}{ }^{\prime \prime}$ |
| 6a | hieida | At that, lo! that snake sank back down, | aiha | $p$ - | $0_{p^{-}}$ | oo'иo |  |
| 6 b |  | and seemed to go away. |  | $i_{t^{-}}$ | $m_{p^{-}}$ | odau | $-o-\chi_{n}$ |
|  |  | Post-climax event |  |  |  |  |  |
| 7 | hieida | At that I thanked God. |  |  |  | em-aa'o | $-i=k a_{d}$ |
|  |  | Aftermath |  |  |  |  |  |
| 8a | hieida | Thence [about the whole place I came along by], | [ | $i_{t}{ }^{-}$ | $r_{p^{-}}$ | oo'u | ] $\mathrm{N}-i$ |
| 8b |  | another (bad) thing did not happen. |  |  |  | omahu'odio | -bia |
|  |  | Resolution |  |  |  |  |  |
| 9 a |  | Whew! I came along | aiha | $p$ - | $r_{p^{-}}$ | oo'u | $-\varnothing_{n}$ |
| 9 b |  | until I pulled in at my own village, |  | $i_{t^{-}}$ | $r_{p^{-}}$ | ario | $-\varnothing_{n}$ |
|  |  | Setting - Finish |  |  |  |  |  |
| 9c |  | being on the O river. |  |  | $\varnothing_{p^{-}}$ | $o o ' a$ | - $\varnothing_{n}$ |
|  |  | Rounding off |  |  |  |  |  |
| 10a | kiauka | That's done, my story. |  |  |  | (no verb) | -i |
| 10b |  | My name is A.M. |  |  |  | (no verb) | $=k a_{d}$ |

I now summarise the features of the morphemes in each clause position, going from left to right.

### 11.2.1 Clause-initial conjunctions

This narrative has only two conjunctions:

- hieida 'at that, thence' is commonly translated into English by Kope people as 'from there'; it serves to show that the next event starts off in the same scene, and may be a response to the events of that scene (as in $5 \mathrm{a}, 6 \mathrm{a}, 7$ ), or it may indicate that the scene is simply a point of departure for a new scene or phase of the story (as in 8a).
- kiauka, which is used in conversation to show that the matter in hand has been dealt with, and the next matter can now be considered, or the conversation wound up. In this narrative it indicates the end of the story (10a).


### 11.2.2 Pre-verbal adverbs

This narrative has only one pre-verbal adverb, aiha 'lo', which indicates that the reader/listener should give special focus to the verb to follow as the predicate of an event that has produced (or is producing) a strong emotional effect that the speaker wishes to convey, an effect that ranges from 'scary' to 'determined' to 'relief'. Although aiha is an adverb rather than an exclamation in Kope, it is functionally equivalent to such English exclamations as 'lo!', 'hey!', or 'whew!'. A search through the corpus shows that such an event either can be planned by the protagonist (in which case its achievement is usually fortunate), or else it can be brought on by an antagonistic action (in which case its achievement is usually unfortunate). In the former case, aiha is used to indicate that the protagonist is either determined to carry out the action, or is relieved to have successfully carried it out (as in 9a) in this story. In the latter case, aiha is used to indicate that the antagonist did something scary (as in 4d) or at least surprising (as in 6a). I show this in the simplified translation by the use of the English exclamations such as 'Hey!' and 'Lo!' (in 4 d and 6 a) before the verbs of the climactic actions, and 'Whew!' (in 9a) before the successful resolution of the post-climactic events.

### 11.2.3 Tense and person markers

There are three tense marking schemes used in this narrative for real events set in the past: (1) one that marks the tense precisely, with the prefix $p$ (i)- 'D.PST' (distant past); (2) one that marks the tense less precisely with the prefix $i_{t^{-}}$'PST' (general past,
including distant, intermediate, and recent pasts); and (3) one that does not mark the tense at all, but the stem is simply nominalised by the article suffix -i 'DET' (determiner) and sometimes also marked for focus by the clitic $=k a_{d}$ ' DECL ' (declarative).

The tenseless verbs do not have person marking, while those marked for tense do. The first person marker $r_{p^{\prime}}$ follows both past tense prefixes, and the second and third person irrealis marker $m_{p^{-}}$sometimes follows $i_{t}$-, but never $p$-. The lack of any overt second/third person realis marking, has led me to two conclusions, the first being that the second/third realis is marked by a zero morpheme (as mentioned above), which I make overt with the symbol $\varnothing_{p^{-}}$; the second being that the realis/irrealis distinction is neutralised for the first person.

Considering the degree of affixation, and the degree of specificity of the affixes, I suggest that when a verb has a precise tense and person marking, this must indicate a call for a closer focus on the whole event in discourse space (especially with regard to timing and participants in their various roles), compared with those verbs that have a less precise tense, or no tense at all. On the other hand, the use of a tenseless (and personless) verb must indicate that the action alone (without the context of timing and participants) is all that is necessary to be conveyed at that point, and that any need for focus on that action can be shown by a special particle. Therefore I suggest a fourfold semantic categorisation for the verbs in this narrative - a categorisation that also holds good for the other narratives studied in this paper:

- Verbs that focus on an event as a whole - the action, the precise timing, and the participants involved. These have person marking and a precise tense marking (i.e. $p$ - 'D.PST' in distant past narratives). For the purpose of this study, I will call these key-event $p$-verbs (or just $p$-verbs). ${ }^{5}$
- Verbs that describe an action as a part of a larger-scale event sequence. These have person marking, but only an imprecise tense marking ( $i_{t^{-}}$'PST'). I call these supplementary $i$-verbs (or just $i$-verbs). ${ }^{6}$

[^3]- Verbs that mention an action as something that needs to be known about, but is not of primary focus. These have neither person nor tense marking, but are nominalised by suffixation with the determiner $-i$. I call these background nominalised verbs (or plain nominalised verbs).
- Verbs that focus just on the action as something interesting to pay attention to. These are both nominalised by the determiner -i, and also marked as interesting by the declarative marker $=k a_{d}$. I call these action-focused ikaverbs (or just ika-verbs).

Indeed, this narrative contains four clauses where tense is precisely marked with keyevent $p$-verbs that cover the four key events of the story. If one thinks of the telling of a story as a walk along a fence, then those four clauses are like the main posts that support the whole structure of the fence/story. The first $p$-verb clause (1b) marks the first event of the narrative (coming away from the distant village), and makes up the sole clause of that sentence (which shows, incidentally, that $p$-verbs can form independent clauses). The second and third $p$-verb clauses ( 4 d an 6 a ) mark the climactic events (the appearance and disappearance of the snake), and the fourth (9a) marks the event that brings the whole sequence of events in the story to a final successful resolution (the safe arrival home).

The second category of verbs are the $i$-verbs. Supplementary $i$-verbs in this story (those marked with the general past tense marker $i_{t}$ ) are particularly interesting. They never occur alone in a sentence, i.e. they are dependent on another clause. There are three $i$-verbs in the text, each occurring in connection with a preceding or following $p$-verb or tenseless verb ( $4 \mathrm{a}-\mathrm{c}, 6 \mathrm{a}-\mathrm{b}$, and $9 \mathrm{a}-\mathrm{b}$ ). In function it seems to show a close connection between the actions, such that $i$-verb action either leads up to, or else completes another action. In the fence analogy, they act as the supporting bracing on either side of the main posts.

The use of these supplementary $i$-verbs in dependent clauses occurs in other supporting structures in the language, especially in time-setting clauses and relative clauses. In the text above, for example, there is an $i$-verb in a relative clause in 8a, i.e. the verb $i_{t}-r_{p}-o o$ ' $u-\varnothing_{n}$ 'that I came' in $i_{t}-r_{p}-O o$ ' $u-\varnothing_{n}$ mati tutuu- $i$ 'the length of territory that I came through (PST-1P-come-SG.SBJ place long-DET) ${ }^{\prime} .{ }^{7}$ ( $P$-verbs, on the other hand, are seldom used in relative clauses.)

[^4]It is interesting to look more closely at the verb forms associated with the supplementary $i$-verb in the same sentence. As mentioned just above, the $i$-verb is nearly always associated with a key-event $p$-verb or an action-focused ika-verb, or both; and such verbs may precede the $i$-verb, or follow it, or both precede and follow it. For example, in $4 a-d$ the crossing of the big river begins with the starting out from the side of the river, which is marked in 4 b by an action-focused $i k a$-verb (combined with a preceding plain nominalised verb in 4 a ), aabu-i omahoro- $i=k a$ 'started to cross (cross-DET start-DET=DECL)'. Reaching the middle of the river is marked in 4 c by the supplementary event $i$-verb, $i$-r-oo'u- $\varnothing_{n}$ '...until I came (PST-1P-come-SG.SBJ)', so that the senses of the $i k a$-verb and $i$-verb combine together as: 'I started across until (at last) I came (to the middle), ...'. The use of the $i$-verb at that point of the narrative indicates that the situation is fairly normal so far, but is transitional - something more interesting is imminent; and indeed, in the next clause, 4 d , a $p$-verb is used for the climactic appearing of the big snake, $p-\varnothing_{p}$-eibua $-\varnothing_{n}{ }^{\text {' }}$ (...when a big snake) rose up! (D.PST-SG.ABS-rise-SG.SBJ)'.

In $6 \mathrm{a}-\mathrm{b}$ the sinking of the snake is again marked by a precisely tensed $p$-verb, $p$ -$\varnothing_{p}$-oo' 'иo- $\varnothing_{n}$ 'it sank (D.PST-SG.ABS-sink-SG.SBJ)', and the subsequent heading off and away is marked by the the less precisely tensed $i$-verb, $i_{t}-m_{p}$-odau-o 'until it must have headed off (PST-2|3.IRR-go-away)', combined as: '(it) sank down until [at last] it must have headed off [under the water], ${ }^{8}$ Again, the $p$-verb with its precise tense marking is used for the more interesting event, while the $i$-verb with its less precise tense is used for the supplementary event.

In $9 \mathrm{a}-\mathrm{b}$ another sequence of a $p$-verb followed by an $i$-verb occurs. The coming to the vicinity of the village is marked by a $p$-verb, pi- $r_{p}-o o$ ' $u-\varnothing_{n}$ 'I came (D.PST-1P-come-SG.SBJ)', and the subsequent pulling in at the bank to round off that event is marked by an $i$-verb, $i_{t}-r_{p}-\varnothing_{n}$-ario- $\varnothing_{n}$ '(and) I pulled in' (PST-1P-SG.ABS-arriveSG.SBJ)', combined as 'I came [safely up to the village] and pulled in'. Again, the more precise tense of the $p$-verb of the first clause indicates that the action in that clause is the key event, and the less precise tense of the $i$-verb in the second clause tells the reader that the event in that clause has only a supplementary role.

As for the tenseless, nominalised verbs in 3 a and 4 a , the verb aabu 'cross' occurs twice as a plain nominalised verb, aabu-i 'crossing (cross-DET)', and it functions as the object of the verb omahoro 'start' in a verb phrase translatable as 'started the

[^5]crossing' or 'started to cross'. ${ }^{9}$ The action of crossing a river is a normal sort of thing to do, so it is not very interesting in itself - it merely provides the setting for what follows. In the fence analogy, background nominalised verbs behave like the horizontal railings that are mostly hidden by the more interesting posts and palings, but are behind them to help to join the whole thing together.

When a tenseless nominalised verb is put into focus by the declarative marker $=k a$, however, things are more interesting. There seem to be two functions for such action-focused $i k a$-verbs. One is to provide action detail efficiently; for example, there is a cluster of $i k a$-verbs in clauses $2 \mathrm{a}-4 \mathrm{~b}$, and these clauses serve to inform the reader in detail of the actions that make up the major event stated by the $p$-verb in 1 b . In detail, the coming back from the distant village (in 1b) involves these steps: going through a passage (in 2a), emerging at the next river (in 2b), starting to head across towards the middle of that river (in 3a, and recapitulated in 4b). In general they focus on the sequence of actions that make up an event, without regard to their absolute timing or to the specifics of the people involved. In the fence analogy, these $i k a$-verbs act as the palings that are spread out to fill the gap between the posts.

The second function of $i k a$-verbs is to show immediate responses, where the participants and the timing are already clear. Examples of these usages occur in clauses 5 a and 7, where the protagonist responds in prayer to the climactic events of 4 d and $6 \mathrm{a}-\mathrm{b}$. The "immediacy" noted by Schulz in chapter 3 of this volume (§3.3.3) for such verbs is borne out in these instances. In the fence analogy, "immediate response" $i k a$-verbs are like palings that are particularly closely spaced.

### 11.2.4 Other verb/clause-final suffixes/clitics

I will here briefly mention the other end-of-clause suffixes or clitics that occur in this story.

- The suffix -o in 6 b is used to show continuation for an indefinite time. So in 6 b the verb is $i_{t}-m_{p}$-odau-o 'and it must have gone off and away (never to be seen again) (PST-2|3.IRR-go-away)', rather than just 'and it must have gone (and lurked nearby)'.

[^6]- The clitic =bia in 8 b is a negative marker. The awkward sounding literal translation as 'another thing did not happen' is more idiomatically translated in English as 'nothing else (untoward) happened'.
- The clitic $=k a_{d}$ is declarative, and has informative and focusing functions. These functions in action-focused $i k a$-verbs have already been discussed. The clitic has also been used once each at the beginning and end of this narrative in verbless setting clauses where explanations of the story setting and authorship are being offered. It has also been used in the speech in 5b during the climax of the story, where God's attention (i.e. focus) is being hopefully directed through prayer.


### 11.3 Discourse analysis of text 2 ' The Pig'

Text 2, 'The Pig' is another written story. It is glossed in the appendix to Part II of this volume. This discourse has both singular and plural subjects and objects, so an extra column labelled 'Number' for absolutive number prefixes has been added to the chart, but subject suffixes are grouped with other suffixes. The morpheme cluster $-i=k a_{d}$ 'DET $=$ DECL' is henceforth abbreviated to $-i k a$. Subordinate clauses and similar structures are inside square brackets, and the head noun of relative clauses is represented by N , and once again the verb affixes $p$ - 'D.PST' and -ika 'DET=DECL' of the independent verbs are boxed in bold, because of their particular relevance to the discussion below.

Table 31. Structure of text 2 "The Pig"

|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | Introduction |  |  |  |  |  |  |
| 1 |  | A story about us. |  |  |  |  | (no verb) | $=k a_{d}$ |
|  |  | Setting |  |  |  |  |  |  |


|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5b |  | a nipa leaf blocked it. |  |  |  | $\varnothing_{n^{-}}$ | от -орио | -ika |
| 6a | kiauka | So the pig lay down, |  | $p$ - | $\emptyset_{p^{-}}$ | $\varnothing_{n-}$ | uta'a | - $\chi_{n}$ |
| 6b |  | as [there was no way out]. | [ |  |  | $\varnothing_{n-}$ | ohuи'o | $\left.\varnothing_{n}\right] \mathrm{N}=i r i$ |
|  |  | Lead-up - Combined Scenes |  |  |  |  |  |  |
| 7a | kaa | And we at last entered P creek | aiha | $p$ - | $r_{p^{-}}$ | $\theta_{n^{-}}$ | odoro | -ито |
| 7 b |  | near the end as [the pig lay there] | [ | $i_{i}{ }^{-}$ | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | orobu | $\left.-\varnothing_{n}\right]=i d a$ |
| 7c |  | we, surprisingly, passed by. | aiha | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | ohodi | -mo |
| 7 d |  | We did not know |  |  |  |  | (no verb) | $=b i a$ |
| 7 e |  | that [it slept under the nipa]. | [ | $i_{t-}$ | $\emptyset_{p^{-}}$ | $\varnothing_{n^{-}}$ | orobu | $\left.-\varnothing_{n}\right]-i$ |
| 8 | kaa | Then at last we went out from the end. | aiha | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | ohuи'o | -mo |
| 9 |  | Someone hooked a fish. |  |  |  | $\varnothing_{n^{-}}$ | ahurai | -ika |
| 10 |  | My sister instructed me (about the fish). |  |  |  | $\varnothing_{n-}$ | odu'ai | -ika |
| 11 |  | I spoke to her (agreeing) |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 12a | kaa | And so we headed out, | ai- | $p$ - | $r^{-}$ | $\theta_{n-}$ | ohиu'o | -mo |
| 12b | ida | when suddenly someone called out. |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 12c |  | Father spoke (about the caller). |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 13 |  | Father explained to us (about the caller) |  |  |  | $i_{n}$ - | odu'ai | -ika |
| 14a |  | The place [where the pig was] | [ | $i_{t-}{ }^{-}$ | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | odudio | $\left.-\chi_{n}\right] \mathrm{N}-i$ |
| 14b |  | was blocked from view by the point, |  | $p$ - | $\emptyset_{p^{-}}$ | $\theta_{n-}$ | ome-urudio | $-\varnothing_{n}$ |
|  |  | Pre-climax events |  |  |  |  |  |  |
| 15a | kaa | and when [we rounded the point], | [ | $i_{i-}$ | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | ome-oa'ee | $\begin{aligned} & -u m o] \\ & =i d a \end{aligned}$ |
| 15b |  | [the pig's ripplings (of the water)] | [ | ? $i_{t^{-}}$ | $\emptyset_{p^{-}}$ | $? i_{n^{-}}$ | aapo'ia-buo | - $\chi_{n}$ ]-i-ha |
| 15c |  | we saw them. |  | $p$ - | $r_{p^{-}}$ | $i_{n}-$ | (e) $m e e^{\prime} a$ | -mo |
| 16 | $i d a$ | Suddenly Father spoke (opining a crocodile); |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 17 | ida | suddenly Mother spoke (opining a cassowary); |  | $p$ - | $\emptyset_{p^{-}}$ | $\varnothing_{n^{-}}$ | aa'o | $-\varnothing_{n}$ |
| 18 | $i d a$ | suddenly we recognised a pig. |  | $p$ - | $r_{p^{-}}$ | $\emptyset_{n^{-}}$ | oibomai | -mo |


|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Climax |  |  |  |  |  |  |
| 19a | $\begin{aligned} & \text { kiau- } \\ & \text { ka } \end{aligned}$ | Okay, Father chopped the pig's neck, |  | $p$ | $\varnothing_{p^{-}}$ | $\emptyset_{n^{-}}$ | u'uai | $-\varnothing_{n}$ |
| 19b |  | causing the neck bones to come apart. |  | $i_{t}{ }^{-}$ | $\varnothing_{p^{-}}$ | $i_{n-}$ | $m_{c}$-ara'eai | $-\varnothing_{n}$ |
|  |  | Post-climax events |  |  |  |  |  |  |
| 20 |  | Mother and I danced. |  | $p$ - | $r_{p^{-}}$ | $\theta_{n^{-}}$ | $a^{\prime} a^{\prime}$ | -do |
| 21a | kaa | And lo! we pulled the pig in | aiha | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | om $_{\text {c }}$-ario | -ито |
| 21b |  | grounding it against the bank, |  |  |  |  | odabuai | -ika |
| 22a |  | heaving it aboard, |  |  |  | $\varnothing_{n^{-}}$ | omia | -ika |
| 22b |  | getting it into the canoe. |  |  |  | $\varnothing_{n^{-}}$ | omia | -ika |
|  |  | Winding-down |  |  |  |  |  |  |
| $\begin{aligned} & 23- \\ & 25 \end{aligned}$ | kaa | Father spoke (about providence) |  |  |  | $\emptyset_{n^{-}}$ | aa'o | -ika |
| 26 |  | Father said thanks. |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 27 | kaa | And then we headed out with joy. |  | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | ohuu'o | -ито |
| 28a | kaa | Mother decorated Sister and me |  |  |  | $i_{n}{ }^{-}$ | (o)dodiai | -mama -ika |
| 28 b |  | while [we were returning]. | [ | $i_{i-}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | oiodi | $-m o$ ] $\mathrm{N}-i$ |
| 29a |  | While [we were paddling back], | [ | $i_{t}{ }^{-}$ | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | omiodii | $\begin{aligned} & -m o] \\ & -i d a \end{aligned}$ |
| 29b |  | the people saw us (and commented) |  | $p$ - | $r_{p}{ }^{-}$ | $i_{n-}$ | (e) $m_{b}-e e^{\prime} a$ | -mo |
| 30 |  | (more of their comments) |  |  |  |  |  |  |
| 31 a | ida | Suddenly they recognised the pig. |  | $p$ - | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | oibomai | -mo |
| 31 b |  | (Comments about the pig.) |  |  |  |  |  |  |
|  |  | Resolution |  |  |  |  |  |  |
| 32 |  | We responded (about killing it). |  |  |  | $\varnothing_{n^{-}}$ | aa'o | -ika |
| 33 a |  | We removed a foreleg for RG, |  |  |  | $\theta_{n^{-}}$ | $e m_{b}-a^{\prime} u и b a$ | -ika |
| 33b |  | and we carried it to and for him, |  | $i_{t}{ }^{-}$ | $r^{-}$ | $\theta_{n}-$ | $\begin{aligned} & \text { om }_{b} \text {-om }_{c}- \\ & \text { odau } \end{aligned}$ | -mo |
| 33c |  | and at last gave it to him. | aiha | $p$ - | $r_{p}{ }^{-}$ | $\theta_{n^{-}}$ | $e m_{b}$-a'ai | -mo |
| 34 | kamia | At the same time he gave us money for it, |  | $p$ - | $r_{p}{ }^{-}$ | $i_{n}$ - | (e) $m_{b}-a^{\prime} a i$ | $-\varnothing_{n}$ |
| 35 | bia-i | but (it was) in vain; we stopped him. |  | $p-$ | $r_{p}{ }^{-}$ | $\chi_{n-}$ | (e) $m_{b^{-}}$ amaraibo | -mo |


|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rounding off |  |  |  |  |  |  |
| 36a | kiau- <br> ka | The story [of how my father killed a pig for me(?)] | [ | $i_{t}{ }^{-}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | $e m_{b}-a i^{\prime} i a$ | $\left.-\varnothing_{n}\right] \mathrm{N}-i$ |
| 36b |  | is finished. |  |  |  | $\varnothing_{n^{-}}$ | or ${ }_{\text {m }}$-opoi'o | $-\varnothing_{k a}$ |

### 11.3.1 Clause-initial conjunctions

This narrative is strikingly different from text 4 ("The Big Snake", Table 30 above) in that hieida ('at that/thence') is absent, and instead the progress through events is marked by other conjunctions, especially by kaa:

- kaa, translatable as 'and', 'next', or 'then', is commonly used to show resumption of the narrative after diversions (e.g. in clauses $7 \mathrm{a}, 8,12 \mathrm{a}, 15 \mathrm{a}$, and so on). It may also show simultaneity of one event with the previously mentioned one (e.g. in $4 a$ and $b$ ).
- kamia translatable as 'and', 'but', 'or', or 'at the same time'. The corpus data shows it commonly used to show alternative or supplementary viewpoints, and in this narrative it introduces a considered response to an action that was, in the end, rejected.
- kiauka translatable as 'no more talk', 'anyway', or 'okay', occurs three times - once to end a particular line of action (between $5 b$ and $6 a$ ), once to start a sudden new line of action (in 19a), and finally to end the whole narrative itself (in 36a).
- ida, translatable as 'suddenly', is used to show the growing excitement of the participants in 16-18 just before the climactic event in 19, and again in 31a as the village people realise what is going on.
- biai, from =bia 'not' + -i 'DET' is used to comment that an action was carried out in vain (or unsuccessfully).


### 11.3.2 Pre-verbal adverbs

There are two pre-verbal adverbs in this text:

- aiha 'lo' shows successful achievement of a planned outcome in most instances (7a, 8, 21a, 33c), but in 7c it shows a surprising outcome brought about by the cleverness of the pig.
- ai- 'FOC' is probably a shortened version of aiha. It occurs once in this narrative, at clause 12a, where it shows that the actors are acting decisively to move on after spending time catching a fish and discussing what to do with it.


### 11.3.3 Tense marking

$\boldsymbol{P}$-verbs. In this narrative, as in text 4 (Table 30 ), key-event $p$-verbs give the essential backbone events of the whole story, as shown below in the following summary:

1. Going off on the hunt (2b).
2. The tide going up (4a).
3. The tide carrying them up (4b).
4. The pig being hidden up a creek (6a).
5. The hunters entering the creek (7a).
6. Passing the hidden pig (7c).
7. Turning back at the end of the creek (8).
8. Heading on out (12a).
9. The view of the pig still being blocked (14b).
10. Seeing signs of the pig (15c).
11. Saying it was a cassowary (17).
12. Recognising it as a pig (18).
13. Killing it (19a) - the climax!
14. Rejoicing (20).
15. Fetching its carcass (21).
16. Heading back home (27).
17. The people seeing them (29b).
18. The people recognising the pig (31a).
19. Giving a portion of the pig to someone (33c).
20. Being given payment for it (34).
21. Payment being rejected (35).
$\boldsymbol{I k} \boldsymbol{a}$-verbs. There are several events or sequences of events where the tenseless action-focused $i k a$-verbs are used. A single-clause use of an $i k a$-verb in 16 shows an immediate response after spotting the ripples made by the hidden pig. There are two sequences which are detailed pre-climactic asides ( $9-11$ and $12 \mathrm{~b}-13$ ), that seem to be included to show the total unawareness on the part of the participants of the presence of the pig, the recognition of which would soon precipitate the climax. Another such sequence (21b-26) details the quick succession of five events that serve to cement the success of the climax (i.e. grounding the carcass against the bank, heaving it aboard, getting it aboard, speaking about God's goodness, giving thanks). The last sequence of $i k a$-verbs (32-33a) details the excited response when the people in the village realise that a pig has been killed.

It is interesting to note that most, but not all, uses of $i k a$-verbs in this story are in relation to actions by individuals, rather than the whole group.

Sequences with $\boldsymbol{i}$-verbs. The event sequence in clauses 33a-c is interesting. It starts in 33a with an ika-verb focusing on the action of removing the foreleg of the pig as a gift for RG. The subsequent action of carrying the foreleg to the beneficiary (RG) is what would be normally expected, and so, as a supplementary event, it is encoded with an $i$-verb. This form of the verb also includes actor and beneficiary marking, indicating that the personal interactions around this event are important. (Using a focused key-event $p$-verb instead of an $i$-verb in 33b might have made the carrying of the leg to RG sound somewhat random or unusual, rather than culturally normal; and using an action-focused $i k a$-verb might have made it sound more exciting and fast-paced than it should.) This carrying action is also the lead-up to the action in focus - the actual handing over of the meat in 33 c . This and the interactions that follow use key-event $p$-verbs, fully inflected for tense and person. This usage indicates that, although sharing food and reciprocating is also culturally normal, in this instance there are complications in the reciprocation, so some focus on both the action and the participants is in order.

As for the climactic event sequence of $19 a-b$, the best analysis of the verb in $19 b$ shows it to be a supplementary $i$-verb telling of the breaking apart of the neck bones
resulting from the father delivering the actual chop to the neck (given as a key-event $p$-verb in 19a). ${ }^{10}$

### 11.3.4 Participant number

Subject number. There are 18 examples of plural subjects marked by -(u)mo 'PL.SBJ' marked on $p$ - and $i$-verbs (that also encode tense and person), half of them referring to the movement of the hunting party aboard their canoe (intransitive verbs), the others to speech, sight, and other actions of the party or other groups (transitive verbs); when the plural subject marking was not there, the subjects of those verbs were all singular (apart from one dual subject marked by -(i)do 'DU.SBJ'). On the other hand, no action-focused nominalised ika-verbs with plural subjects were marked for plural in this story. This will be discussed further in §11.6.


#### Abstract

Absolutive number. There are five instances of plural objects marked by $i_{n}$ 'PL.ABS' on key-event $p$-verbs - the hunters in the canoe being carried by the tide (4b), the ripples spotted by the hunters (15c), the bones being broken (19b), the people in the canoe being seen by the people in the village (29b), and the meat donors being offered money (34); and there are two instances on action-focused $i k a$-verbs the people being told something (13), and the two people being decorated (28a). The absolutive plural marking was not used for any intransitive plural subjects in this story - the only such subject was the hunting party, and the intransitive verbs concerned referred to their travelling around together (as one body) in their canoe; this subject was treated as singular.

There is one interesting case in clause 36a, where the translation of the singular beneficiary-marked verb is rendered by a plural beneficiary: $i_{t}-r_{p}-\varnothing_{n}-m_{b}-a i ' i a$ '(he) killed it for $u s$ (PST-1P-SG.ABS-BEN-kill)', whereas I would have thought it would be translated '(he) killed it for $m e$ '. It may be that the family is regarded as a unit here, as it has been for intransitive plural subjects together in a canoe - but this is unusual for non-subjects.


[^7]
### 11.3.5 Other clause-final phenomena

The use of tenseless action-focused $i k a$-verbs marked by the clitic $=k a$ has already been discussed. I will now briefly discuss the other end-of-clause suffixes or clitics that occur in this story.

- The clitic =ida 'LOC': clauses (and some phrases) ending in the locative marker -ida are time settings. In this text, 2 a is an example of a time-setting noun phrase marked with $=i d a$, and $5 \mathrm{a}, 7 \mathrm{~b}, 15 \mathrm{a}$ are examples of clauses marked with =ida. Such clauses are usually translatable in English as whenor while-type subordinate clauses. The verbs in such clauses in this Kope narrative are all supplementary event $i$-verbs.
- The determiner suffix $-i: i$-verbs do not take the determiner suffix $-i$, in main clauses, but in sentence 7 e an $i$-verb is in an embedded clause, and the determiner nominalises the $i$-verb ( $i_{t}-\varnothing_{p}$-orobu- $\varnothing_{n}$ 'it slept (PST-2|3.REAL-sleep-SG.SBJ)') so that it becomes the object of the predicate uитоo 'know', as shown in (47) where the embedded clause is enclosed in square brackets:
(65) Rimo ata uumoo=bia [ruu utu-i mabu-i=da 1 pl other know=not 3 sg nipa-det base-det=loc
$i-\varnothing_{p}$-orobu- $\left.\varnothing_{n}\right]-i$. pst-2|3.real-sleep-sg.sbj-det
'We did not know that [it was lying at the base of the nipa palm].'
- (A similar example of verbal nominalisation occurs in 15 b .)
- Relative and other embedded clauses: the narrative contains relative clauses (14a, 28b, 36a) where a clause with a supplementary $i$-verb precedes the head noun. $2^{\text {nd }} / 3^{\text {rd }}$ person markers in these and other embedded $i$-verb clauses in the text are all realis (that is, in $5 \mathrm{a}, 7 \mathrm{~b}, 7 \mathrm{e}, 14 \mathrm{a}, 15 \mathrm{a}, 15 \mathrm{~b}, 28 \mathrm{~b}, 29 \mathrm{~b}$, and $36 a)$.


### 11.4 Discourse analysis of text 1 'Personal Experience'

This story was written under the same circumstances as "The Big Snake". A version of the story also appears with glosses and free translation as text 1 in the appendix to

Part II of this volume. ${ }^{11}$ The story is an odyssey of journeys and sojourns in various villages, which I have divided into six "scenes". The story's original title was "Moo sikuri himioi - My school days", and the focus of each scene is on the father's work and the author's and his siblings' schooling while at that place - except for one scene, which was on the river. In Scene 4 a crisis develops which ultimately leads to the accident on the river in Scene 5, which is perhaps the story's climactic event. The story then goes on to show how everyone concerned recovered from that event, slowly returning full circle to Scene 6 , which is the same village as Scene 1 ; the story finishes with a summary of how things have evolved since then, especially in the realm of work and schooling.

Being an odyssey, there are many key events along the way - there are, infact, 23 key-event $p$-verbs in this narrative. There are also many people and places - I have abbreviated their names in the chart below. One particular group of ika-verbs are boxed in double lines; they have a special function to be discussed in §11.4.3.

Table 32. Structure of text 1 "Personal Experience"

|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Introduction |  |  |  |  |  |  |
| 1 |  | My village MG- $i$ is in the K area. ${ }^{12}$ |  |  |  | $\varnothing_{n^{-}}$ | $o o ' a$ | $k a_{d}$ |
| 2a |  | My name - Marame. |  |  |  |  |  | $-\varnothing_{k a}$ |
|  |  | Scene 1 - Mia'ogoma (MG) |  |  |  |  |  |  |
| 2b | kaa | When [I was 7 years old], |  |  |  |  | (no verb) | ]-ida |
| 2c |  | my father put me in school. |  | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | edee'a | - $\chi_{n}$ |
| 3 |  | My father: a medical. |  |  |  |  | (no verb) | $k a_{d}$ |
| 4 |  | My mother: a village woman. |  |  |  |  | (no verb) | $k a_{d}$ |
|  |  | Scene 2 - Inaua (IN) |  |  |  |  |  |  |
| 5 | kaa | That year (they) sent my father to IN , | $a i-$ | $p-$ | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | otiodoai | -mo |
| 6 |  | (so) we went from MG to IN. |  |  |  | $\varnothing_{n^{-}}$ | odau | -ika |
| 7a |  | During [that year] | [ |  |  |  | (no verb) | ]-ida |

[^8]|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 7b |  | my brother R was put in Baimuru (BM) school. |  | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | edee 'a | -ито |
| 8 |  | That year I stayed out of school, with my younger brothers |  | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | emiidio | - $\chi_{n}$ |
| 9a |  | While [living happily there], | [ | $i_{t-}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | emiidio | -umo]-ida |
| 9 b | kiauka | okay, word came |  | $p$ - | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | oo'и | - $\chi_{n}$ |
| 9c |  | we must go to MP |  | ma- | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | odau | -mo |
|  |  | Scene 3 - Mapaio (MP) |  |  |  |  |  |  |
| 9d | kaa | and so we left IN. |  |  |  | $\varnothing_{n^{-}}$ | emeheai | -ika |
| 10 | kaa | And we left IN after 1 year. |  |  |  | $\varnothing_{n^{-}}$ | emeheai | -ika |
| 11 |  | We left R in school at BM. | ai- | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | emeheai | -mo |
| 12 | kaa <br> hioida | So from that point father started work |  |  |  | $\varnothing_{n^{-}}$ | omahoro | -ika |
| 13 |  | And I started school. |  |  |  | $\varnothing_{n^{-}}$ | omahoro | -ika |
| 14 |  | B,M,K - they were small. |  |  |  |  | (no verb) | $k a_{d}$ |
| 15 |  | They used to stay home. |  | $p$ - | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | emiidio-dio | -ито |
| 16a |  | They used to go, |  |  |  | $\chi_{n^{-}}$ | oda(u) | -ika |
| 16b |  | and they used to catch prawns, |  |  |  | $i_{n-}$ | obo | -ika |
| 16c |  | and when they would cast lines, |  |  |  | $\varnothing_{n^{-}}$ | a'ai | -ida |
| 16d |  | they used to catch fish. |  |  |  | $\varnothing_{n^{-}}$ | e'иа | -ika |
| 17 |  | The people would bring us food. |  |  |  | $i_{n-}$ | (o) $m_{c}$-oroho | -ika |
| 18a |  | We were at MP only one year. |  |  |  |  | (no verb) | $k a_{d}$ |
|  |  | Scene 4 - Maipenairu (MU) |  |  |  |  |  |  |
| 18b | hioida mia | And from there they sent us to MU |  |  |  | $i_{n-}$ | (o) tiodoai |  |
| 22a | kaa | And our father started work, |  |  |  | $\varnothing_{n^{-}}$ | omahoro | -ika |
| 22b | mia | and put me in school. |  |  |  | $\varnothing_{n^{-}}$ | edee 'a | -ika |
| 19 |  | A reach of the PN River [which is located on a reach of the PR], | [irei |  | $m_{p^{-}}$ | $\varnothing_{n^{-}}$ | oo'a | $\left.-\varnothing_{n}\right] \mathrm{N}$ |
| 20 |  | MU village is located on (it). |  |  |  | $\varnothing_{n^{-}}$ | oo'a | $-k a_{d}$ |
| 21 | kaa | And the mouth is located on the sea. |  |  |  | $\varnothing_{n-}$ | oo'a | $-k a_{d}$ |
| 23 |  | Aruhe was born after one year |  | $p$ | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | u'uai | - $\varnothing_{n}$ |
|  |  | Crisis |  |  |  |  |  |  |
| 24a | hioida | We did not stay there long |  |  | $\varnothing_{n^{-}}$ | $\varnothing_{n^{-}}$ | emiidio | -ито |


|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | = bia |
| 24b | mabu | because fighting was bad |  |  |  |  |  | ka |
| 24c |  | and it unfortunately continued | aiha | $p$ - | $\varnothing_{p^{-}}$ | $\theta_{n^{-}}$ | odau-dio | -dio |
| 25 | aa'o <br> rairi | For that reason we made a decision and came away. | aiha | $p$ | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | oo'и | -mo |
| 26a |  | Luggage was stowed in the front |  | $i_{i}{ }^{-}$ | $\varnothing^{-}$ | $\theta_{n}{ }^{-}$ | $o o ' a$ | $-\varnothing_{n}$ |
| 26b |  | and stowed in the back of the canoe, |  | $i_{l^{-}}$ | $\chi_{p^{-}}$ | $\varnothing_{n^{-}}$ | $o o ' a$ | $-\varnothing_{n}$ |
|  |  | Crisis/Scene 5 - on the river |  |  |  |  |  |  |
| 26c | kaa | and as [we came away] | [ | $i_{t^{-}}$ | $r_{p^{-}}$ | $\chi_{n^{-}}$ | oo'и | -mo]-ida |
| 26d |  | the sun shone on us on the PN. |  | $p$ - | $r_{p^{-}}$ | $i_{n}{ }^{-}$ | (o) maho |  |
| 27a |  | As [we came] | [ | $i_{i-}$ | $r_{p}{ }^{-}$ | $\theta_{n^{-}}$ | oo'u | -mo]-ida |
| 27b |  | so that [we could turn the point] | [ | ma- | $r_{p}{ }^{-}$ | $\theta_{n^{-}}$ | om ${ }_{c}$-oa'ee | -mo]-iri |
| 27 c |  | we were acting to do it - |  | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | a'ai | -mo |
| 27d |  | our father's eyes were sleepy; |  |  |  |  | (no verb) | ka |
|  |  | Climax (Scene 5) |  |  |  |  |  |  |
| 28a | kaida | then suddenly as [we turned] | [ | $i_{t}{ }^{-}$ | $r_{p}{ }^{-}$ | $\theta_{n^{-}}$ | $o m_{c}$-oa'e | -mo]-ida |
| 28b |  | the canoe turned itself over | aiha | $p$ - | $\varnothing_{p^{-}}$ | $\theta_{n^{-}}$ | $e r_{m}$-ehe'eidio | - $\varnothing_{n}$ |
| 28c | kiauka | and that was it, we had capsized. | aiha | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | $o-m_{c}$-uhobia | -mo |
| 29a | kaa | we had already come far, near MP, | ta- | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | oo'и | -mo |
| 29b | kiauka | and that was it, we capsized. |  |  |  | $\chi_{n^{-}}$ | ome ${ }_{c}$-uhobia | -ika |
| 30a | kaa | and the water carried things off | aiha | $p-$ | $\chi_{p^{-}}$ | $i_{n}{ }^{-}$ | (o) $m_{c}$-odaudio | - $\chi_{n}$ |
| 30b | kaa | and some things sank | aiha | $p$ - | $\chi_{p^{-}}$ | $i_{n}-$ | o'иo | -mo |
|  |  | Resolution (Scene 5) |  |  |  |  |  |  |
| 31a |  | We were all okay. |  |  |  |  | (no verb) | $k a_{d}$ |
| 31 b |  | We righted the canoe, |  |  |  | $\theta_{n^{-}}$ | odomoiai | -ika |
| 31 c |  | in order to come on. |  |  |  | $\theta_{n^{-}}$ | oo'u | -iri |
| 32a |  | When [we came on], | [ | $i_{i^{-}}$ | $r_{p^{-}}$ | $\theta_{n^{-}}$ | oo'и | -mo]-ida |
| 32 b |  | we slept instead at MP; |  | $p-$ | $r_{p^{-}}$ | $i_{n}{ }^{-}$ | (o)robu | - $\varnothing_{n}$ |
| 32c | kaa | and the next day we started |  | $p$ - | $r_{p}{ }^{-}$ | $\theta_{n-}$ | omahoro | -ито |


|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 32d |  | coming, |  |  |  | $\varnothing_{n^{-}}$ | oo'u | -i |
| 32e |  | until we came (together) to BM. |  | $i_{i^{-}}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | oo'u | -mo |
|  |  | Scene 6/1-slow return home |  |  |  |  |  |  |
| 33a | kaa | And we finished the year at BM. |  | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | opoi'o | -ито |
| 33 b | kaa | And I finished school there too. |  | $p$ - | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | opoi'o | $-\varnothing_{n}$ |
| 34 | kaa | And we returned from BM to MG. |  | $p$ - | $r_{p}{ }^{-}$ | $\varnothing_{n-}$ | arm-aimai | -mo |
| 35 | mia | My father started work again. |  |  |  | $\varnothing_{n^{-}}$ | omahoro | -ika |
| 36 |  | I and others started school, |  |  |  | $\varnothing_{n^{-}}$ | omahoro | -ika |
| 37 | kaa | and thence we finished our last years of school at KHS (one by one). |  | $p$ - | $r_{p^{-}}$ | $i_{n-}$ | opoi'o | -ито |
|  |  | Round-off |  |  |  |  |  |  |
| 38 |  | Now we are here. |  |  |  |  | (no verb) | - $\varnothing_{k a}$ |

There are a few comments that can be made on the conjunctions and adverbs, but the more interesting observations concern the habitual aspect, the different kinds of purpose, and differentiating between various functions and senses of the prefixes with the form $i$-.

### 11.4.1 Clause-initial conjunctions

This longer narrative features conjunctions found in both of the shorter narratives examined above - hioida 'there/thence' (which is an alternative pronunciation of hieida seen in the other texts), kaa 'and', and kiauka 'done with that' with the same functions as discussed above. Two others are similar in form to others seen already: kaida 'and suddenly' (like ida 'suddenly' discussed above) introduces the sudden climactic event in 28a; and mia 'and' (like kamia 'and' discussed above), introduces additional events (with action-focused ika-verbs).

Other conjunctions introduce explanations: mabu 'because' and aa'o raa-iri 'for that reason (that thing-RSN)'.

### 11.4.2 Pre-verbal adverbs/adverbial prefixes

$A i$ - 'FOC' occurs twice, and, as in other texts, is associated with decisive actions (clauses 5 and 11).

Aiha ' lo ' occurs six times, drawing the reader's focus to the unfortunate nature of five events (in $24 \mathrm{c}, 28 \mathrm{~b}-\mathrm{c}$, 30a-b), and once to the decisive, determined nature of a first person action (clause 25 ) (where it is translated '(we) made a decision and...').

The deictic adverb ire 'there' is used in 19 to describe the location of a particular village (see further discussion below).

The prefix $t a$ - 'perfect' (or 'already') occurs in one clause (29a) that provides background information to the climactic event ("we had already got to [a certain point], when...").

### 11.4.3 Habitual aspect

This text shows examples of two different morphemes (or morpheme combinations) of the form -ika. One is the $-i=k a$ '-DET=DECL' seen in the action-focused $i k a$-verbs of other texts for filling in details (e.g. the father getting work and the son starting school on arrival in a new location in 22a-b) and for showing immediate responses (e.g. righting the canoe in 31b); but the new function appearing in this text is for habitual actions (e.g. day by day going out, catching bait, and hooking fish, 16a-17). These two homonyms are actually differentiated phonologically by their tone patterns - in the habitual action -ika marked verb the tone on the syllable $/ \mathrm{ka} /$ is low e.g. [ $\overline{0}$ 'dáíkà] '(he) habitually goes/went', while in the the action-focused $i k a$-verb the $/ \mathrm{ka} /$ has some stress and a down-stepped falling contour, e.g. ['ödáí, kà] 'then he went/now he's off'. The low tone pattern for the habitual marking is similar to that seen when the interrogative particle $r a^{L L}$ follows a noun (see Petterson, this volume, ch. 12), while the falling tone pattern of the action focused marking is due to the declarative marker, $k a^{\mathrm{HL}}$. In the meantime (pending further study) the habitual form may be tentatively analysed as oda(u)-ika 'go-HAB'.

### 11.4.4 Purpose

The text has three 'purpose' type clauses, which are interesting in that they each have different levels of marking complexity.

In clause 32 d the verb is a plain nominalised form, marked simply by the article $-i$ 'DET', i.e. oo 'u-i 'coming/to come'. It follows and complements the action-focused $i k a$-verb omahoro- $i=k a$ '(we) started (start-DET=DECL)'. The semantics are conveying that the action of 'coming' is a "low-risk" intention, but that the starting of it is something to focus on.

In clause 31c the verb is marked by -iri, or more exactly, $-i$ ' ${ }^{\text {DET' }}+=r i$ 'reason', i.e. oo' $u-i=r i$ 'in order to come (come-DET-RSN)' or more literally 'coming (being the) reason'. Note that, again, tense, person and number are not marked - the verb just follows and complements the action-focused $i k a$-verb odomoiai-i=ka '(we) righted (the canoe) (fix-DET=DECL)'. The semantics of the clause are focused on explanation.

In clause 27 b the verb $m a-r_{p}-\varnothing_{n}-o m_{c}$-oa'e-mo-i=ri 'so that we could turn (the corner) (OBLG-1P-SG.ABS-CAUS-turn-PL.SBJ-DET=RSN)' is interesting in that it has a kind of hybrid morphology. Not only does it have the nominalising determiner suffix $-i$, but it also has specific person and number prefixes, and a prefix in the tensemarking "slot". But instead of that prefix being a normal tense marker, it is the obligative marker $m a$ - 'OBLG'. It is non-finite in usage, complementing the finite verb pi- $r_{p}$-a'ai-mo 'we acted (D.PST-1P-do-PL.SBJ)' in 27 c , so that the combination of verbs means 'we were about to turn (the corner)', or more literally, 'in order that we could/should turn (the corner), we acted'. The semantics are focused on goals (i.e. "high-risk" intentions that could fail, and did fail in this case).

### 11.4.5 Participant number

An interesting contrast appears in objects marked with and without $i_{n^{-}}$in this text. In clause 33a everyone in the family finished the year together at Baimuru, and the verb is pi- $r_{p}-\varnothing_{n}$-opoi'o-umo ${ }_{n}$ 'we finished it together (D.PST-1P-SG.ABS-finish-PL.SBJ)', where the object ("year") is referenced by the singular absolutive with the zero prefix, $\varnothing_{n^{-}}$; in clause 37 all the children finished their last years at high school in Kikori. Even though there was just the one school, and each had just one last year, each finished their particular last year one after the other (being different ages and stages). To express this the plural object, $i_{n}-$, is used in addition to the plural subject -umo : pi- $r_{p}-i_{n}$-(o) poi'o-umo ${ }_{n}$ 'we finished (our last years) in the same way, one after the other (D.PST-1P-PL.ABS-finish-PL.SBJ)'.

The use of this "one after the other" plural object marker is also seen with some kinds of intransitive plural subjects. In 32 b , $\mathrm{pi}-r_{p}-i_{n}-(o) r o b u-\varnothing_{n}$ 'we slept (D.PST-1P-PL-sleep.lie-SG.SBJ.)' refers to the family sleeping as guests in a nearby village after the accident on the river. In this case the intransitive subject is marked by $i_{n}$ - as a plural absolutive, but not by $-u m o_{n}$ as plural subject. When I discussed this with a Kope speaker (Samson Aumarie, p.c.), he said that the suffix -umon, was actually optional, and thought that it made no difference to the meaning in this particular case. He also said that the combination of singular absolutive and plural subject, however,
was not acceptable, that is, *pi- $r_{p}-\varnothing_{n}$-orobu-mon *'we went to sleep ("as one") (D.PST-1P-SG.ABS-sleep-PL.SBJ). ${ }^{13}$ The strongly preferred use of the absolutive plural marking with orobu 'sleep' may indicate that sleeping is especially seen as something that people do as individuals, each on their own mats, dropping off one by one in their own time, rather than a coordinated affair where everyone drops off at the same time.

The marking of intransitive subject plurals by $i_{n}$ - also occurs at $30 \mathrm{~b}, p-i_{n}-o^{\prime} u o-$ dio-umo $_{n}$ 'they (the bags) sank (D.PST-PL.ABS-go.down-PROG-PL.SBJ)'. Here the bags are referred to on the verb both as subject (with -umon), indicating that all the bags sank at the same time and place, and as absolutive (with $i_{n}-$ ), indicating that each bag sank separately.

This use of plural subject marking for "same time" plurals and plural absolutive for "one by one" plurals is discussed more extensively below in $\S 11.5 .5$.

### 11.4.6 Non-tense uses of $\boldsymbol{i}$ - in the tense prefix position

The use of an $i$-verb (with the general past tense marker $i$-) supporting a main verb is seen only once in this text ( $32 \mathrm{c}-\mathrm{e}$ ), but $i$-verbs do appear in four time-setting subordinate clauses with -ida 'LOC, when', (e.g. in 28a). There are also two interesting non-tense uses of the prefix $i$ - in the tense-marking position that will be discussed here.

It was mentioned in the introductory section that the generic past marking prefix $i_{t}$ - has, at its root, a deictic sense 'there', and it appears that 'there' is still one of the senses of the suffix in some contexts. In this narrative it does occur with this sense, once with the irrealis marker $m_{p}$-, and twice without it.

The first use is in 19, where the present location of a river is being pointed out (metaphorically) in a relative clause (delineated by square brackets), with the $2^{\mathrm{nd}} / 3^{\mathrm{rd}}-$ person irrealis marker $m_{p}$-. I think that the irrealis marker $m_{p}$ - has an evidential use in this case; that is, the speaker is using that form to talk about what can be reasonably assumed without physically looking (because of remoteness of time or distance). Clauses 19-20 are given in full in (66), where the irrealis-marked verb and its translation is underlined:

[^9](66) | $[$ Purari | $i p i=i d a$ | ire | $i-m-o o ' a]$ | oomo | Panaroa |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Purari | section-LOC | there | DEI-2\|3.IRR-SG.be | river | Panaroa |
| ipi=ida | $\varnothing_{p}$-oo'a-ka, |  | Maipenairu | go'oto. |  |
| section-LOC | $2 \mid 3 . R E A L-S G . b e-P R E S ~$ | Maipenairu | village |  |  |

'Maipenairu village is located on a reach of the Panaroa river [which (one should be able to find) is there on a reach of the Purari]. ${ }^{14}$

Note that the location of the village on the river is expressed using the same verb (oo'a 'be there (singular)') in the second clause of (66), but without the irrealis marker in this instance.

There are other examples of the evidential use of the irrealis marker in the corpus in informative and descriptive passages:
(67) Ara muramura-i, i-m-ii'a muramura moto=ida
this medicine-DET DEI-2|3.IRR-PL.be medicine house=LOC
'These medicines (one should normally be able to find) are there in the clinic.' (TB2)
(68) Maubi hoohoo-i, Era tuia-ida a'oidio-ka, i-m-odoro, Maubi mouth-DET Era river-LOC branch-PRES DEI-2|3.IRR-enter

Mai $=$ ato $\quad i$-m-odabuai.
Mai=LOC DEI-2|3.IRR-join
'The mouth of the Maubi branches off from the Era River, and from there (one should be able to find that) it goes inside [the swamp], and there (one can find) it joins the Mai.' (Willie1)

[^10](69) Oomo-i bara-i=da utu-i i-m-oti-du-umo river bank-DET=LOC nipa.palm-DET DEI-2|3.IRR-stand-IRR.PL-PL.SBJ
... ime-i i-m-i-dudio obo-iogoro-i=da crab-DET DEI-2|3.IRR-PL.ABS-float water-DET inside-DET=LOC
'Nipa palms (one should normally be able to find) are standing there on the river bank ... crabs are (normally) swimming around there in the water.' (Leipa2)

It should be noted, however, that the general existence of things is not always shown with the use of the irrealis marker. For example, compare the forms of the verb oti 'stand' used in (69) above with that used in (70) below, which comes from a story about the construction of a wharf, and where the location of various species of trees used is expressed with a realis present tense form of the verb: ${ }^{15}$
(70) Ara abo-i paira ka Eremoi. Bu'i-i=da this post-DET name DECL Mersawa bush-DET=LOC
$\varnothing_{p}-\varnothing_{n}$-oti-ka-umo.
2|3.REAL-SG.ABS-stand-PRS-PL.SBJ
'These posts are (of a tree) named Eremoi. They stand in the bush.' (Goilavi3)

The realis expression of location also occurs in text 1 (Table 32) in lines 26a and b where two simultaneous situations are being listed ('some luggage being in the front, some luggage being in the back'), in the past, but without any irrealis marking because the situation was fully observed. The relevant part of sentence 26 is given in (71) with the (zero marked) person morphemes also indicated.

[^11](71) Raara-i pee-i mame-i=da $\underline{i-\varnothing_{p}-O O^{\prime} a,{ }^{16}}$
things-DET canoe-DET prow-DET=LOC PST-2|3.REAL-SG.be

stern-DET=LOC PST-2|3.REAL-SG.be and PST-1P-come-PL.SBJ-DET=LOC
'Luggage was there in the prow, and was there in the stern, and then as we came away ... (the day dawned on us on the river).'
(The use of the singular absolutive form of the location verb, oo' $a$ 'be there (singular)', shows that, although the subject raarai 'things' is plural, those things are being regarded as a single load of luggage.)

The evidential use of $m$ - '2|3.IRR' is borne out in the commentary inside the following extract from a story about a canoe that drifted away because the person in charge assumed it was still there without looking.

'Again he called out, "Have you checked the canoe?" Our brother said, "Sure it's floating there." But our brother did not check the canoe; he just spoke for the sake of speaking from inside the house.' (Ian1)

[^12]
### 11.5 Discourse analysis of text 3 'Visit to Bavi'

'Visit to Bavi' is an oral story, recorded, transcribed, and glossed and translated as text 3 in Appendix 2 of Part II of this volume. It is a long story ( 64 sentences) about events taking place over three days, including the morning of the recording. Consequently there are three tenses in use in the story: distant past, intermediate past, and near past. For the purposes of this paper I will look mainly at the first 12 sentences, broken up into three episodes. In sentence 13 the tense-marking changes from the Distant Past to the Intermediate ('yesterday') Past, so I will also examine the first Intermediate Past episode, and also a later episode involving the climax of the story, in order to compare usages across tenses. (The section in the near past tense is too brief to analyse fruitfully.)

Because we have an oral recording of this story, it is also possible to take intonation into account. I have observed that a phrase- or clause-final level intonation indicates that the sentence is incomplete and more information follows in the next clause; a rising intonation indicates anticipation that the information to follow will be particularly interesting; and a falling intonation indicates the information given is complete - the sentence (or paragraph) has come to an end. (See also $\S 12.16$ of this volume.) These intonations are indicated by punctuation marks in the English translations in the charts of the episodes presented in this paper. (See footnote to Table 33 below). One side effect of taking intonation into account is that the sentence breaks differ in a few places from those in Schulz's version of the story, as shown in text 3 (in Appendix 2 of Part II of this volume). The intonation information also gives me confidence to add a "Function" column to the charts for this story.

The audio also shows that prefixes and suffixes involving /i/ are sometimes lengthened, and therefore likely to involve more than one of the homonymic $i$ morphemes - e.g. in 2b, 4a, and 5c of Episode 1.

### 11.5.1 Episode 1

The use of the supplementary $i$-verbs versus key-event $p$-verbs is very interesting in this episode, and the summary translation has been influenced both by the intonational cues and by the observation that $i$-verbs are always used in dependent clauses in the other stories already analysed.

Table 33. Structure of text 3 "Visit to Bavi" episode one

|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix | Function |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | The Arrival |  |  |  |  |  |  |  |
| 1a |  | The other day: we went out to B.* | ai- | $p$ - | $r_{p^{-}}$ | $\chi_{n^{-}}$ | ohuи'o | $\begin{aligned} & -\varnothing_{k a} \\ & -u m o \end{aligned}$ | Setting Main |
| 1b |  | (It was) in order to do thanksgiving: at B. |  | $m a-$ | $r_{p}{ }^{-}$ | $i_{n-}$ | (e) $m_{b}$-a'ai | -iri | Reason |
| 2a | kaa | And so we went to B and - |  | $i_{t}{ }^{-}$ | $r_{p^{-}}$ |  | odau | -mo | Suppl. |
| 2b |  | paddling down to P's house - |  |  |  | $\varnothing_{n^{-}}$ | oodoi | -i | Bridge |
| 3 | hieida | there they did a welcome for us. $\dagger$ |  |  |  |  | a'ai | $\begin{aligned} & -m o \\ & -i k a \end{aligned}$ | Action |
| 4a |  | We walked up from the bank and - |  | $i_{t-}$ | $r_{p}{ }^{-}$ | $i_{n}-$ | idiai | -mo | Suppl. |
| 4b |  | sat around under the house. |  |  |  | $\chi_{n^{-}}$ | emi'ei-tuti | -ika | Action |
| 5a |  | The B youth (individually) walked down (and) - |  |  |  | $i_{n}-$ | oodoi | -ika | Action |
| 5b |  | got our things for us. $\ddagger$ |  |  |  | $i_{n}{ }^{-}$ | (e) $m_{b^{-}}$ eidai | -ika | Action |
| 5c |  | (They) carried them to T's house and - |  | $i_{t}{ }^{-}$ | $\varnothing_{p^{-}}$ | $i_{n}-$ | (o) $m_{c}{ }^{-}$ odau | -mo | Suppl. |
| 5d | kaa | then put them there. |  | $p$ - | $\varnothing_{p^{-}}$ | $i_{n}-$ | (e)dee 'a | -ито | Main |

* Punctuation indicates intonational cues - a colon indicates anticipation of interesting information (rising pitch), a dash indicates continuance of the sentence (level pitch), and a full stop indicates the end of the sentence (falling pitch).
$\dagger$ On arrival at a village for an official visit, people know where to pull in by the appearance of a palm-branch archway decorated with flowers on the river bank. When the boat pulls in, the hosts stand on the bank and sing, while the guests get out of the boat, climb up the steps, walk through the archway, and shake hands with the hosts. The whole arrangement is known as a uerukam 'welcome'.
$\ddagger$ Unloading the boat involves two or three people passing bags from the boat up the steps and depositing them on the bank, while a stream of individuals walk down to the bank, each grabbing a bag, and walking back up to a house to deposit it there; and then they walk back down to get another bag, and so on.


### 11.5.2 Independent clauses (with $\boldsymbol{p}$ - and $\boldsymbol{i k a}$-verbs)

This episode has two $p$-verb clauses encoding the key events - one at the beginning (1a, 'we went out...') introduces the whole story, and one at the end of the first
episode (5d '...they put our bags down') concludes the episode. The other events in this episode are all within the realm of the cultural norm for what happens between setting out and arriving for a visit, so the $p$-verb is not used there. After stating the purpose of the visit with a reason clause (1b), the rest of the verbs in the episode are a mix of supplementary $i$-verbs, action-focused $i k a$-verbs, and one background nominalised verb.

### 11.5.3 Background nominalised verb as a bridge

Clause 2 b contains a background nominalised verb $\varnothing_{n}$-oodoi-i 'going down together (in one canoe) (SG.ABS-go.down-DET)'. This clause serves as a bridge between one event (coming out from the inland village to the main-river village), and another event (the welcome ceremony at the arrival place). A phrase-final determiner sometimes marks a topic (see $\S 11.3 .1$ ), and, as a bridge, the determiner-marked verb is also providing the topical setting for the following event. (More examples of such bridging can be seen in 6 c and 7 c of Episode 2 in Table 35 below.)

### 11.5.4 Sequences of supplementary $i$-verb clauses

In this episode there are three supplementary $i$-verb clauses that come at the beginning of a sentence, introducing event sequences that are culturally typical, but not completely described in one clause: 'we went to Bavi village, and...' (2a), 'we walked up from the bank, and...' (4a), 'they carried (the luggage) to the house, and...' (5c). These sentences are each completed in a final clause using an action-focused $i k a$-verb in two cases ( 3 and 4 b ), and a key-event $p$-verb in the other case ( 5 d ).

In the first two of these sentences ( 2 a and 4 a ) the subject is 'we' and the person marker is $r_{p^{-}}$' 1 P ', but in the third (5c) the subject is 'the young people', and a zero person prefix $\varnothing_{p^{-}}$' $2 \mid 3$.REAL' is used, indicating that these clauses are in realis mood. ${ }^{17}$ This confirms the observation made before that the events described with $i$-verb clauses are real events in the backbone of the story - but they are just not ones that signal big changes in the story line.

I have looked at other stories too, and found that whole sequences of supplementary $i$-verb clauses can occur which are eventually completed with an

[^13]independent form. An example of this is presented in (73) from the written literacy book story "The Boy and the Crab" by Oria Gemo (Schulz, p.c.).

| Ime- $i$ | $i_{t}-\varnothing_{p}-\varnothing_{n}$-om $m_{c}$-idiai, | moto | rupu-ida |
| :--- | :--- | :--- | :--- |
| crab-DET | PST-2\|3.REAL-SG.ABS-CAUS-go.up house | bottom-LOC |  |
| obodamo- $i$ | $i_{t}-\varnothing_{p}-\varnothing_{n}$-om | -ododiai, | gara- $i$ |
| pond-DET | PST-2\|3.REAL-SG.ABS-BEN-make | fence-DET |  |

$$
\begin{array}{cll}
i_{t}-\varnothing_{p}-\varnothing_{n}-o m_{c}-a a ' e e, & i m e-i & \text { odobiai- } i=k a . \\
\text { PST-2|3.REAL-SG.ABS-CAUS-round crab.DET } & \text { put.in.water-DET=}=\mathrm{DECL}
\end{array}
$$

'He carried the crab up from the river ( $i$-verb), and made a pond for it at the back of the house ( $i$-verb), and put a fence around it ( $i$-verb), and then he put the crab in the water (ika-verb).'

The first three clauses have supplementary $i$-verbs, and speak of essential but nonclimactic events. The sequence concludes with an action-focused ika-verb in the fourth clause. Use of an $i k a$-verb may indicate that the whole sentence is a detailed expansion of a key event at a higher level - how a boy started to rear (or raise) a crab. This sequence of $i$-verbs + a final $i k a$-verb seen here is reminiscent of the sequences of medial verbs + final verb found in other Papuan languages. There is an important difference, however; the supplementary $i$-verb events of Kope may also follow the main verb, as has been seen in the narratives already examined (e.g. text 4 line $9 b$, Table 30, and text 2 line 19b, Table 31).

My conclusion is that $i$-verb + realis-person clauses mark events that are important to the flow of the story, but these events are supplementary stages rather than main events, and are typically events that take place within the normal course of cultural activities.

### 11.5.5 More on intransitive subject marking

The use of $i_{n}$ - for plural intransitive subject in certain contexts noted in the last section and in text 1 (see §11.4.5) is seen again here in text 3 (Table 33). Compare 2 b with 5a above, and also with 7 a in Episode 2 below in this text. In 2 b the verb $\varnothing_{n}$-oodoi-i 'going down (SG.ABS-go.down-DET)' has a plural intransitive pronominal subject rimo 'we', but this is marked by the singular absolutive plural prefix. This is because, being in a canoe, they are traveling together as one body. In 5a (and again in 7a below), however, the same verb does have the intransitive subject marked by that
prefix, $i_{n}$-oodoi- $i=k a$ '(we) went down (on foot) (PL.ABS-go.down-DET=DECL)'. This is because each person is going down by their own effort, one by one. ${ }^{18}$

This kind of difference in how the people move (or do other things) in relation to each other (and to time) is important in Kiwaian languages. Harris (2010:15) notes that in the closely related Urama language, when a verb has plural subjects the prefix $i$ - 'PL.ABS' is added if each subject is acting separately, but it is omitted if they are acting together in one action. He gives the following example (in Urama, but it is the same in Kope): abu-mo '[you plural] cross over [in one canoe] (cross-PL.SBJ)' vs. $i$ -abu-mo '[you plural] cross over [in your various canoes, or each of you on foot] (PL.ABS-cross-PL.SBJ)'.

Indeed, in the lexicon (Clifton et al. 2019) there are a number of intransitive verbs listed with singular or "in canoe"-type plural subject forms along with multiple or "on foot'-type plural subject forms based on $i$ - 'PL.ABS', for example, oiodi/i-oiodi 'return to the village', abudio/i-abudio 'go across on a bridge', odudio/i-dudio 'float', ohu'o/i-ohu'o 'come out', odoro/iidoo 'enter', ohui/i-ohui 'be hanging', oidio/i-oidio 'be in a container', oto 'a/i-to 'a 'stand up', o'uo/i-o 'uo 'climb down', arahiai/i-rahiai 'fall down', araimai/i-raimai 'return'.

One example from this list can be seen in 1a of text 3 , where pi-r- $\varnothing_{n}$-ohu'o-umo 'we went out (D.PST-1P-SG.ABS-go.out-PL.SBJ)' is marked with plural subject (-umo) but singular absolutive $\left(\varnothing_{n^{-}}\right)$, indicating that they all went together at the same time in just one canoe.

It is also interesting to note that there are four very common verbs - two intransitive and two transitive - that never have this absolutive plural prefix directly attached to the root: odau/*i-odau 'go', oo'u/*i-oo'u 'come', aa'o/*i-aa'o 'say', and $a$ 'ai/*i-a'ai 'do'. ${ }^{19}$ I cannot explain this - it must be a particular peculiarity of the language. As far as I can tell, all other verbs of motion, speech, and action can take that prefix.

[^14]
### 11.6 Subject marking options and combinations

In line 3 of text 3 there is an action-focused $i k a$-verb which has the plural subject marked with -mo on the root, thus: a'ai-mo-i=ka '(they) did (the welcome) (do-PL.SBJ-DET=DECL)' In the three texts examined so far, the background nominalised verbs and action-focused nominalised $i k a$-verbs have had minimal affixation. For example, in lines $21 \mathrm{~b}-22 \mathrm{~b}$ of text 2 an event starts with $p$-verb marked for plural subject ('we pulled the pig in...'), but the 3 ika-verbs that follow on just fill in the action details of that event, and are not marked for plural subject ('... and grounded it, and heaved it aboard, and got it into the canoe'). What I think is happening here is that when the number of participants for an event has already been clearly established, there is no need to repeat it on the action-focused verbs involved in the same event. But when an ika-verb is introducing a new event (such as a response to another event), and the number of people participating is important, then the plural marking is added. In the case of text 3:3, the visitors' canoe has just arrived, and its not just one person but a crowd of people on the bank that respond in a joint act of welcome.

Another example of this kind of use of -mo 'PL.SBj' can be seen in text 4:6a (see Table 35 below), where the verb is $i_{n}$-(e)ma'ai-mo- $i=k a$ '(they) gave (us things to eat) (PL.ABS-give-PL.SBJ-DET=DECL'. In this case, the $i k a$-verb is the first clause of the meal event, and the use of -mo 'PL.SBj' adds the detail that many people worked together to contribute the food for that meal.

The examples just given in this section all involve transitive verbs, where only the suffix can mark a plural subject. If we turn our attention to the intransitive verbs, things get more interesting, as now the absolutive plural prefix can also mark the plural subject. Although no intransitive verb with a single subject is marked as a plural in any of our data (which would be rather odd!) there are many instances of such verbs with plural subjects where either the prefix, or the suffix, or even both, are marked singular instead of plural. Although there are examples of each possible combination in the texts under study in this paper, I also carried out a search of the corpus for additional examples of these combinations to support an explanation based how the participants acted - singularly, severally, jointly, or severally and jointly. An example of each of those five possibilities is shown in (74). (The glossed examples come from the corpus search, and additional references to examples in the texts studied in this paper are also given.)
(74) a. Singular absolutive and singular subject (individual)

Нери- $\quad \varnothing_{n}$-оrио- $\varnothing_{n}-i=k a$. (Goilavi1)
ground-det SG.ABS-go.down-PL.SBJ-DET=DECL
'The ground slipped away.'
(One participant acting singularly.) (Also see text 1:8.)
b. Singular absolutive and plural subject (group)
$\begin{array}{ll}O d a(u)-\varnothing_{n}-i=k a & \varnothing_{n} \text {-ario- } \varnothing_{n}-i=k a \ldots . \\ \text { go-SG.SBJ-DET=LOC } & \text { SG.ABS-arrive-PL.SBJ-DET=DECL }\end{array}$
'We went (in one canoe) and pulled in (at the house site).'
(Many participants acting singularly.) (Also see text 3:2b).
c. Singular absolutive and plural subject
$\begin{array}{lll}\text { Imi }=\text { ato } & \text { emi'ei-mo- } i=k a . & \text { (Goilavi1) } \\ \text { Imi=LOC } & \text { sit-PL.SBJ-DET=DECL }\end{array}$
'We settled at Ivi (a new village site, which everyone cleared and built together).'
(Many participants acting jointly.) (Also see text 3:1a and 3).
d. Plural absolutive and singular subject

Ri... i-raimai-i=ka.
3P PL.ABS-return-DET=DECL
'They returned (each in their own canoe, to their own house).'
(Many participants acting severally.) (Also see text 3:5a.)
e. Plural absolutive and plural subject

Turiaha go'oto uubi-i i-ahi'iai-mo- $=$ =ka. (Akia3)
all village people-DET PL.ABS-depart-PL.SBJ-DET=DECL
'All the village people crossed over (en masse, in a fleet of canoes)'
(Many acting both jointly and severally.) (Also see text 1:30b and 37)
These five possibilities are summarised in Table 34.

TABLE 34. NUANCED SENSES OF INTRANSITIVE SUBJECT MARKING MORPHEME COMBINATIONS
ON NOMINALISED VERBS

Singular Subject
$-\varnothing_{n}$

## Plural Subject

-(u)mo

| Singular |
| :---: | :---: | :---: |
| Absolutive |
| $\varnothing_{n^{-}}$ | | Singularly |
| :---: |
| (b) one group ("in a canoe") |$\quad$| Jointly |
| :---: |
| (c) one group acting together |
| ("in concert") |

Although I have focused on the action-focused nominalised verbs, this subject marking scheme also seems to work for intransitive tense-marked verbs too.

### 11.6.1 Episode 2

Proceeding to Episode 2, this is an explanation of two events that took place as part of the program put on for the guests - the meal and the worship meeting. Nothing unusual happens.

Table 35. Structure of text 3 "Visit to Bavi" episode two

|  | Conj | Event | Adv | Tns | Psn | Num | Verb root | Suffix | Function |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 6a | The evening program |  |  |  |  |  |  |  |  |
| $\begin{array}{l}\text { In the evening they gave } \\ \text { us food. }\end{array}$ |  |  |  | $i_{n^{-}}$ | (e) $m_{b^{-}}$a'ai | -mo-ik | Action |  |  |
| ab |  |  |  |  |  |  |  |  |  |$]$

* The audio shows that the verb starts with a long vowel, [i:diaika], indicating a prefix $i$ - has been applied.

That the evening program went as planned, with no surprises, is borne out by the fact that there are no conjunctions, no uses of aiha 'lo!' and no key event $p$-verbs.

The two major events-eating the meal and engaging in worship-are mentioned using supplementary $i$-verbs ( 6 b and 7 b ). They are spoken with a level intonation that indicates that more details are to follow to complete the description of these events. The finishing of the main phase of both these events is mentioned with the background nominalised verb, $\varnothing_{n}$-oropoi'o-i 'finishing (SG.ABS-finish-DET)', spoken with a rising intonation, which indicates that something interesting is to follow immediately after; and these interesting immediate follow-up events are expressed with action-focused ika-verbs, the last of which is shown to be the conclusion of the event-description by its falling intonation.

### 11.6.2 Episode 3

In contrast to the 'normal' activities described in the first two episodes, Episode 3 describes a bit of a crisis - a mosquito attack!

TABLE 36. Structure of text 3 "Visit to Bavi" episode three

|  | Conj | Event | Adv | Tns | Psn | Num | Stem | Suffix | Function |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Mosquito attack |  |  |  |  |  |  |  |
| 8a |  | The place was full of mosquitos. |  |  |  |  | (no verb) | $=k a_{d}$ | Assertion |
| 8b |  | There were many mosquitos. |  |  |  |  | (no verb) | $=k a_{d}$ | Assertion |
| 9 |  | People of various kinds - and the pastor - did not sleep. |  |  |  | $\varnothing_{n}{ }^{-}$ | orobu | = bia | Assertion |
| 10 |  | We had brought only two mosquito nets. |  | $p i-$ | $r_{p}{ }^{-}$ | $i_{n-}$ | (o) $m_{c^{-}}$ odau | -mo | Main |
| 11a | kaa, hieida | And so we then lay down. |  |  |  | $i_{n}-$ | (o)robu | -ika | Action |
| 11b |  | We did not sleep well |  |  |  | $i_{n-}$ | (o)robu | $=b i a$ | Assertion |
| 11c |  | because of the many mosquitos - |  |  |  |  | (no verb) | $-i=r i$ | Reason |
| 11d |  | Lo! (We) were awake. | aiha | pi- | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | oroi'io | -ито | Main |

The first three clauses declare the horrible situation. There are two key-event $p$-verb clauses; one speaks of the badly performed preparation for sleeping over (in clause
10), and the other summarises the consequences (in 11d). The only action-focused $i k a$-verb comes between the $p$-verbs, and, signalled by some conjunctions, begins the more detailed recounting of the consequences of that badly performed preparation (11a-d), leaving us in 11d with the fact that everyone was awake - the "jointly" option of subject marking on the verb shows that everyone was suffering together.

There are two clauses with negative verbs. Both clauses appear to have plural (intransitive) subjects, but only one verb is marked with the $i_{n}$ - plural absolutive prefix (clause 11b) - the "severally" option, showing everyone was tossing and turning on their own. The other case is clause 9 , where the verb is marked for singular person number at both ends - prefix and suffix, indicating a singular subject. The subjects actually listed are 'girls, boys; our father the pastor', so either the whole group was "in the same (sleepless) boat", as it were, or else the verb is drawing sympathy for just the last-mentioned, but most important person in that list.

### 11.7 Discourse options in the intermediate past

Although not the primary focus of this paper, it is interesting to compare the distant past with the intermediate past, since the narrative of text 3 continues into 'yesterday' (from the perspective of the story teller). The next episode, charted in Table 37, introduces the day's activities (but there is as yet no climax). The mark of the intermediate past is the use of the suffix $-d u$ 'INT.PST' for non-singular subjects, and a zero tense prefix. ${ }^{20}$ (Therefore the precisely-tensed key-event $p$-verbs could, in this tense, perhaps also be called " $\varnothing$-du-verbs".) The imprecisely-tensed supplementary $i$ verbs still have the usual general past tense prefix $i$ - 'PST', but, interestingly, they are additionally marked with the intermediate tense suffix - $d u$ (for plurals). The discourse functions of each clause (and some phrases) are noted in the rightmost column of the table.

Table 37. Structure of text 3 "Visit to Bavi" episode four

|  | Conj | Event | Adv | Tns | Psn | Num | Verb root | Suffix | Function |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | Morning activities |  |  |  |  |  |  |  |
| 12b | kiauka | Done, in the morning - <br> we went down (to the <br> meeting house) - |  |  |  |  | N <br> oodoi <br> in | -i <br> (-mo)-ika <br> eito | Topic <br> Action <br> Purpose |

[^15]|  | Conj | Event | Adv | Tns | Psn | Num | Verb root | Suffix | Function |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | for dawn prayer. |  |  |  |  |  |  |  |
| 13 a |  | We had dawn prayer - |  | $i_{t^{-}}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | a'ai | - -du-umo | Suppl. |
| 13 b | in the morning - <br> it finished. |  |  |  |  | N <br> oropoi'o | $-i$ <br> -ika | Setting <br> Action |  |
| 13 c | kiauka | That done: we went up <br> (to the house). |  |  |  | $i_{n^{-}}{ }^{*}$ | idiai | - -ika | Action |
| 13 d |  | We had our wash - |  | $i_{t^{-}}$ | $r_{p^{-}}$ | $\varnothing_{n^{-}}$ | oru'oo | -du-umo | Suppl. |
| 14 a |  | for the main worship. |  |  |  |  | (no verb) | eito | Purpose |
| 14 b |  | As for worshipping: |  |  |  | $\varnothing_{n^{-}}$ | iruudemea | $-i$ | Topic |
| 14 c |  | we got ready. |  | $\varnothing_{t^{-}}$ | $r_{p^{-}}$ | $e_{r^{-}}$ | emaumodi | $-d u-u m o$ | Main |
| 14 d |  | We ate breakfast: |  |  |  | $i_{n^{-}}$ | (uu)ho | $-i$ | Bridge |
| 15 | kiauka | that done the bell rang. |  | $\varnothing_{t^{-}}$ | $\varnothing_{p^{-}}$ | $\varnothing_{n^{-}}$ | aa'o | $-\varnothing_{d u}$ | Main |

* A long $/ \mathrm{i} /$ at the beginning of this word indicates presence of prefix i-.

There are two uses of supplementary-event $i$-verbs in this episode, both beginning a sentence ( 13 a and 13 d ). The $i$-verb of the first such sentence depicts a culturally normal event for these occasions (a "dawn prayer" meeting), and the sentence ends with an action-focused ika-verb showing that it finished successfully. (This is reinforced by the following conjunction, kiauka 'that done'.) The $i$-verb of the second such sentence also depicts a culturally normal event (having a wash), and ends with a verbless declaration about its purpose (for the main service). (This is the only case found where an $i$-verb is not associated with either a $p$-verb or an $i k a$-verb in the same sentence.)

There are two key-event verbs in this episode (14c and 15). The first is preparing for the main worship service, and the second the ringing of the bell. In the latter, the bell is a third person singular subject, so there is both a zero person prefix and a zero number suffix. ${ }^{21}$

A new morphological feature seen in this episode is the use of eito 'destination' as a purpose marker after a noun (12b) or plain nominalised verb (14a).

The use of the absolutive plural marker $i_{n}$ - (the "severally" option) can be seen in 12 b and 13 c , where it indicates that people walked down and then up again, one by one "on foot", rather than all together in a vehicle.

[^16]The absence of $i_{n}$ - in 13 d and 14 c is interesting; the story teller has chosen the "jointly" option of subject number marking, maybe because she saw it as everyone washing together at the same time in the same bay of the river (rather than taking turns), and as everyone getting ready together at the same time in the same house (again, rather than taking turns).

For the next chart, in Table 38, I have skipped ahead in the story to an episode where there is peak excitement. It immediately follows a discussion between the hosts and the guests about how to proceed with the thanksgiving offerings (sentences 3235).

Table 38. Structure of the climactic episode of text 3 "Visit to Bavi"

|  | Conj | Event | Adv | Tns | Psn | Num | Verb root | Suffix | Function |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | The joyful giving |  |  |  |  |  |  |  |
| 36a | kiauka | That done they called us out. |  |  |  | $i_{n}{ }^{-}$ | aho'o | -ika | Action |
| 36b |  | We put on the gospel music. |  |  |  |  | edee'a | -mo-ika | Action |
| 37a | kiauka | With dancing many people of us went (to place gifts). |  | $\theta_{t^{-}}$ | $r_{p}{ }^{-}$ |  | odau | -du-ито | Main |
| 37b |  | We took money over. |  | $\varnothing_{t^{-}}$ | $r_{p^{-}}$ | $O_{c^{-}}$ | aabu | -du-uтo | Main |
| 37c |  | Exuberant joy!* |  | $\varnothing_{t^{-}}$ | $r_{p}{ }^{-}$ | $\varnothing_{n^{-}}$ | aa'o | - $\chi_{n}$ | Exclamati on |
| 37d |  | We were very happy. |  | $\varnothing_{t^{-}}$ | $r_{p^{-}}$ |  | a'ai | -du-ито | Main |
| 38a |  | We went forward. |  | $\varnothing_{t^{-}}$ | $r_{p}{ }^{-}$ |  | odau | -du-ито | Main |
| 38 b |  | We put money down. |  |  |  |  | edee'a | -ika | Action |
| 38c | kiauka | That done - we went back with dancing |  |  |  | $i_{n}-r_{m^{-}}$ | aimai | -ika | Action |

* Hete-i r-aa'o- $\varnothing_{n}$ 'I dance (dance-DET 1P-speak-SG.SBJ)' and ge 'i-ir-aa'o- $\varnothing_{n}$ 'I rejoice (joyDET 1P-speak-SG.SBJ)' seem to be idioms expressing 'exuberant joy', and all occurrences in the corpus are in the present tense/singular subject, in spite of past tense and plural subject contexts.

Note that there are no supplementary action verbs, topics, or settings in the climax depiction - it is all foreground action, with four key-event verbs and four actionfocused $i k a$-verbs.

There are three phases in this episode: the first phase (36a-b) describes a quick response to the foregoing discussion, as they move to get things started, effected with
action-focused $i k a$-verbs; the second phase describes how the story-teller's team took their turn to move forward to present their gift with dancing and joy, effected with key-event tensed verbs; and the third phase describes the deposit of their donation and their going back to their place in the crowd, effected with action-focused verbs again.

### 11.8 Summary of features of past tense narratives

One of the three most interesting discoveries made during this study concerns the four main verb forms used for constructing past-tense narratives, and the divisions between these four forms. One division is between verbs marked for person and tense, versus those not so marked. Each of these divisions are further divided according to whether they form independent or dependent clauses. ${ }^{22}$ The resultant four subdivisions can be diagrammed along the axes of tense/person marking versus dependence, along with their functions, as follows:

TABLE 39. Four common verb forms and functions in Kope past tense narratives

|  | TENSE-MARKED | TENSELESS |
| :---: | :---: | :---: |
|  | Whole event <br> (also marked for person) | Action-only <br> (not marked for person) |
| INDEPENDENT | Key events <br> Foreground <br> Derbs marked for a <br> precise tense <br> $(p-$-verbs) | Details and responses <br> nominalised verbs <br> with focus marker <br> $(i k a$-verbs) |
| Background | Supplementary events <br> verbs marked for a <br> general (imprecise) tense <br> $(i$-verbs) | Topic, bridging, purpose <br> nominalised verbs <br> with no focus marker <br> (marked with article $-i)$ |
|  |  |  |

The characteristics and functions of these two major categories of verb morphology are summarised in Tables 40 and 41.

[^17]Table 40. Features and functions of tense-marked verbs

| Prefix | Sense | Function and Features |
| :--- | :--- | :--- |
| $p-$ | 'distant past' | Used for key events in the backbone of the <br> narrative, including introductory, climactic, and <br> $p^{-} \ldots-d u$ |
| $i_{t^{-}}$ | 'intermediate past | summary. <br> These affixes characterise the ' $p$-verbs" - <br> independent and marked for a precise past tense <br> and for person and number. |
| 'realis' past' + | A backbone event that supplements a main <br> event. Often translatable as '(he) did (this <br> action) and...', or 'having done (this action)', or <br> 'and/until (this happened)'. <br> This prefix characterises the " $i$-verbs" - <br> dependent and marked for an imprecise past <br> tense and for person and number. |  |

TABLE 41. FEATURES AND FUNCTIONS OF TENSELESS VERBS

| Suffix | Sense | Functions and Features |
| :--- | :--- | :--- |
| $-i$ | 'Determiner' | A topic-like function, including a background <br> setting, or an intention of a more salient event, or a <br> bridging state or event between two more salient <br> events. <br> This suffix characterises the "plain nominalised <br> verbs" - dependent verbs also marked for participant <br> number where relevant, but not for tense or person. ${ }^{23}$ |
| $-i=k a$ | 'Determiner'+ <br> 'Declarative' | An assertion about an action taking place, either in a <br> detailed or explanatory aside, or in a fast-moving <br> response, or sequence of responses. <br> This suffix combination characterises the "ika- <br> verbs". ${ }^{24}$ The declarative marker allows the <br> nominalised verb to be used as an independent verb. |

The second interesting discovery concerns the application and functions of two kinds of "plural" affix: (1) the absolutive prefix, where the plural refers to either a number

[^18]of objects, or else a number of separate intransitive subjects acting "severally" or "one by one" (e.g taking turns or walking, rather than being together in a vehicle); (2) the subject suffix, where the plural (or dual or trial) refers to either a number of intransitive subjects that are acting "jointly" or "in concert", or else a number of transitive subjects without any special characteristic. There is sometimes an overlap between the two types of intransitive subject plurals, and both may be marked (see Table 34). The morphemes involved in participant number marking are summarised in Table 42.

TABLE 42. FUNCTIONS OF PARTICIPANT NUMBER MARKERS ${ }^{25}$

| Affix | Sense | Usage |
| :--- | :--- | :--- |
| $i_{n-}$ | plural objects, and plural <br> intransitive subjects acting <br> "severally". | Used in both finite and non-finite verbs. |
| -mama | dual objects, and dual <br> intransitive subjects acting <br> "severally". | Probably used in both finite and non- <br> finite verbs. Used in conjunction with $i_{n}$-. |
| $\varnothing_{n^{-}}$ | singular objects, and singular <br> intransitive subjects (or <br> groups acting singularly). | Used in both finite and non-finite verbs. |
| $-u m o$ | plural subjects acting <br> "jointly". | Used in both finite and non-finite verbs. |
| - ido | dual subjects acting <br> "jointly". | Used in both finite and non-finite verbs. |
| $-\varnothing_{n}$ | singular subject, or plural <br> subjects acting "severally" as <br> individuals. | Used in both finite and non-finite verbs. |

Note that there are certain verbs that never have absolutive plural marking on their roots, even when it seems appropriate: odau 'go', oo'u 'come', aa'o 'say', and a'ai 'do'. But derived forms may take this marking, e.g. i-m-odau 'take them away (ABS.PL-CAUS-go)'.

The third interesting discovery concerns functions of the $2 \mathrm{nd} / 3 \mathrm{rd}$ person irrealis marker in discourse, and the existence of a corresponding realis marker.

[^19]Table 43. Functions of person markers (declarative clauses)

| Prefix | Sense | Usage |
| :--- | :--- | :--- |
| $r_{p^{-}}$ | '1 $1^{\text {st }}$ person <br> involvement' | Mostly subjects, but also objects of various kinds, <br> both realis and irrealis moods. |
| $m_{p^{-}}$ | ' 2 nd $/ 3^{\text {rd }}$ i person <br> irrealis' | Mostly subjects, but also objects of various kinds, <br> irrealis mood e.g. 'it normally [does] or must have <br> [done]'. |
| $\varnothing_{p^{-}}$ | ' 2 nd $/ 3^{\text {rd }}$ <br> realis' |  |

To complete this section, the structural features of a typical Kope distant past tense narrative (particularly as they relate to the verbs) are summarised below:

## Introductory

(a) Introductory states - depicted with verbless declarative $k a$-clauses.
(b) Introductory/summary events - with key-event $p$-verbs.

## Main events

(c) 'Key' events given with consideration of timing and participant interrelationships - with key-event $p$-verbs.
(d) Immediate reactions and fast sequences - with action-focused ika-verbs.
(e) Sequences - with supplementary $i$-verbs, associated with a key-event $p$-verb or action-focused $i k a$-verb.
(f) Climaxes - with a mix of key-event $p$-verbs and action-focused $i k a$-verbs.

## Asides

(g) Detailed asides and explanations - with action-focused ika-verbs
(h) States - with verbless declarative $k a$-clauses.
(i) Habitual actions - verb marked with -ika 'Habitual'

## Backgrounds

(j) Topicalised settings, bridges - with plain nominalised verbs.
(k) Time settings - with supplementary $i$-verbs (and rarely key-event $p$-verbs) marked with -ida 'Locative'.
(l) Causes/Reasons/Purposes - marked with $-i=r i{ }^{`} \mathrm{DET}=\mathrm{RSN}$ '
(m) At-risk intentions - with $m a-{ }^{\prime} \mathrm{OBLG}^{\prime}+-i=r i$ ' $\mathrm{DET}=\mathrm{RSN}$ '
(n) No-risk intentions - with plain nominalised verb

Concluding events - with key-event $p$-verbs.

### 11.9 Conclusion

This study has found that the choice of verb morphology is very important in the construction of a narrative in Kope. The morphology allows for a focus on main events as a whole (the action, the participants, and the timing), or else for a focus on just the action. The morphology also allows for certain events to be backgrounded, again, either as a whole, or else just as an action. The use of conjunctions and preverbal adverbs is also important.

The fourfold verb options used in Kope narratives are the same for distant past and intermediate past, apart from the appropriate precise tense marking changes. It is probably safe to say that narratives set in the near past ('this morning'), the present tense, and even the future tense will also behave like this, but further study, especially in the use of supplementary $i$-verbs (or their equivalent), still needs to be done for narratives set in these tenses.

## Appendix. <br> Text 4. 'The Big Snake'

Source: Writers' workshop run by Robert Petterson in 2005
Author: Ali Willie Mutai
Translation: author
Glossing: Robert Petterson
Village: Meagoma
(1) Tehata $h i^{\prime} a-i=k a$, moo himia pi-r-oo'u, go'oto ata=ato, recent very-DET=DECL 1S self D.PST-1P-come village other=LOC paira-i Meraibari.
name-DET Meraibari
'It was just the other day, I was coming back by myself from a village named Veraibari.'
(2) Eehee- $i \quad a h i a-i=k a$, Imi Meraibari hapuo tama-i passage-DET cut-DET=DECL Imi Meraibari side surface-DET ohu'odidio- $i=k a$. come.out-DET=DECL
'I came through the passage, and came out the other end on the Veraibari side of the Ivi River.'
(3) Aabu-i omahoro- $i=k a$, Imi tuia- $i$ hoho hi'a- $i=d a$, Mirimairau cross-DET start-DET=DECL Imi river-DET face very-DET=LOC Mirimairau go'oto- $i \quad$ oo'aa hapuo- $i=$ eito. village-DET SG.be side-DET=GOAL
'I started to paddle across the surface of the main middle part of the Ivi River, opposite Mirimailau.'
(4) Aabu-i omahoro-i=ka, i-r-oo'u tuia ga'e hi'a-i=da, auo cross-DET start-DET-DECL PST-1P-come river deep very-DET=LOC snake geema-i aiha p-eibua.
big-DET FOC D.PST-rise
'I started across until I came to the middle of the river where it was very deep, when a huge snake suddenly appeared.'
(5) Hieida $m o o=r o$ Urio Abea-i atohetai-i=ka aibau, "Urio Abea, thence $1 \mathrm{~s}=\mathrm{AG}$ spirit father-DET ask-DET=DECL like.this spirit father moo oroi'io- $i$ roo tuu- $i=d a=k a$."
1 S life-DET 2 S hand-DET=LOC=DECL
'When that happened I appealed to God, like this, "Heavenly Father, my life is in your hands!""
(6) Hieida aa'o auo-i aiha p-o'uo, obo-i goro-i thence that snake-DET FOC D.PST-sink water-DET inside-DET i-m-odau-o." PST-2|3.IRR-go-onwards
'When that happened the snake sank down and disappeared under the water.'
(7) Hieida moo=ro Urio Abea-i keito made em-aa'o-i=ka. thence $1 \mathrm{~S}=\mathrm{NOM}$ spirit father-DET thanks word SG.BEN-say-DET=DECL 'When that happened I gave thanks to God.'
(8) Hieida, moo i-r-oo'и mati tutuu-i ata raa ata=ro thence 1 S PST-1P-come place long-DET other thing other $=\mathrm{NOM}$ om-ahu'odio=bia.
SG.BEN-show=not
'From there, nothing else untoward showed up for the whole length of the territory that I came through.'
(9) Aiha pi-r-oo'u i-r-ario moo himia go'oto-i, paira-i FOC D.PST-1P-come PST-1P-arrive 1 SG self village-DET name-DET
Mia'ogooma, Oapo ipi-i=da oo'aa- $\varnothing$. Mia'ogoma, Oapo section-DET=LOC SG.be-PRS.
'I successfully came along until I arrived at my own village, called Meagoma, situated on a reach of the Oapo.'
(10) Kiauka moo odi komu-i. Moo paira-i Ali Willie Mutai=ka. done 1 SG story short-DET 1 SG name-DET Ali Willie Mutai=DECL Kamaubo. Goodbye
'And that is my short story. My name is Ali Willie Mutai. Goodbye.'

## Part IV Kope tone

by Robert Petterson

The following abbreviations and symbols are used in this chapter.

| $\varnothing$ | zero tone |
| :--- | :--- |
| H | high tone |
| Hz | Hertz |
| L | low tone |
| M | mid tone |
| $\mu$ | mora |
| ms | milliseconds |
| STP | surface tone pattern |
| T | any tone |
| TBU | tone bearing unit |
| UTP | underlying tone pattern |
| $>$ | an intermediate tone in an interpolated fall |
| $\downarrow$ | downstep with a pitch drop, even between L and H |
| $\perp$ | downstep with pitch equivalence each side |

The audio recordings on which the tone chapter is based are available at pnglanguages.sil.org/resources/archives/93296

## 12. The tone patterns of Kope noun phrases

The aim of this study is to show a) what tone patterns occur in nouns and other elements of noun phrases in Kope, b) what changes occur in those patterns as those elements come together in a phrase (tone sandhi), and c) how tone and stress are related. This has been done primarily as a help for language researchers wishing to acquire an accurate pronunciation of Kope, and in order to aid the collection of accurate phonological information during the compilation of the Kope lexicon. It is hoped that it will also be of interest to other linguists. (A list of all the tone rules can be found in Appendix 1.)

In this study, after various preliminaries, I start off looking at the surface tone patterns found in isolation on nouns of various syllable structures (§12.3), and show how they each can be derived from four simple underlying tone patterns (§ 12.4). I also present acoustic measurements of these isolation surface patterns and of the different sandhi patterns found when nouns occur in various frames ( $\$ 12.5$ ), and discuss the influence of the article on a noun's tone (§12.6). Next I progressively examine each of these tone sandhi patterns, illustrating them with sets of examples, and showing how they can be derived by various rules ( $\S \S 12.7-12.14$ ). In doing so I pay special attention to the effect of pragmatic focus (especially in $\S \S 12.7$ and 12.8). At various points I illustrate the complete derivations of a number of phrases to show how the rules are ordered and interact with each other. I also discuss how syntax affects tone sandhi ( $\$ 12.15$ ), how intonation affects tone ( $\$ 12.16$ ), and how stress patterns emerge from the interaction of surface tone patterns with syllable structure (throughout the chapter , but especially in §12.11). I end the study by presenting a graphically illustrated summary of the most interesting tone mapping and sandhi rules (§12.17).

The basic phonology of Kope has been described by John Clifton (1991). He lists five vowels, /i $\varepsilon$ a ou/, and ten consonants, $/ \mathrm{pbmtdnkgh}$ /, with an additional marginal consonant $/ \mathrm{s} /$ for words borrowed from other languages. The current orthography (from about 2013) uses $\langle\mathrm{r}>$ for $/ \mathrm{n} /,<\mathrm{m}>$ for $/ \mathrm{m} /$ (including the intervocalic allophone [ $\beta$ ]), <>> for $/ \beta /$, and, of course, <e> for $/ \varepsilon /$, and this
orthographic representation will be used in this paper, in order to maintain consistency with Schulz's usage in this volume.

Clifton also notes that all vowels can be either short or long, e.g. /obo/ 'water', /oobo/ 'woman'. In this paper I make much use of the concept of the mora, a unit of syllable weight, when discussing vowel length. Thus a light syllable of one mora has just one short vowel, while a heavy syllable of two moras has a long vowel or a diphthong.

Concerning tone, Clifton notes its presence in the language, but found that the patterns were "not consistent" (1991:2). Such an observation is not surprising when a word such as /aibi/ 'paddle' is heard with a rising pitch pattern in isolation, but then seems to get a peaking or falling tone pattern in other contexts, such as possessive, interrogative, and declarative statements - a curiosity that this study explores.

### 12.1 Previous studies

Although Clifton did not investigate the tone system of Kope in his 1991 paper, in more recent years he and I have both been collecting data for tonal analysis. As a result of this data collection there have been two previous studies, one of which has been published.

In February 2015, I recorded a list of mainly disyllabic words, both in isolation and in frames. I found four contrastive tone patterns on disyllabic nouns: falling (/HL/), rising (/LH/), level (/HH/), and peaking (/LHL/). ${ }^{1}$ The peaking tone patterns occurred on disyllabic words only if they had a diphthong or long vowel, that is, on words of at least three moras. (They also occurred on trisyllabic words.) I also observed that some $/ \mathrm{LH} /$ and $/ \mathrm{HH} /$ words got a peaking surface tone pattern in certain frames. I passed this unpublished data on to Julia Martin, who referred to it in her paper as Petterson (2015).

Julia Martin published a study (2016:57-67) that expanded on my earlier study, including many longer words from a large body of additional data recorded by John

[^20]Clifton during a field trip that he and I made together to the Kope area in September 2015. Of interest to this paper, Martin reported the following:

- Two surface tone patterns on monosyllabic words: HH and HL.
- Three surface tone patterns on disyllabic words: LH, HH, HL.
- Up to six surface tone patterns on trisyllabic words in various contexts: LLH, LHH, HHH, HHL, HLL, and LHL.
- Four surface tone patterns for non-reduplicated four-syllable nouns: HHHL, LLLH, LLHL, and HHHH.
- A further two surface tone patterns for reduplicated four-syllable nouns: HHLL and HLHL.

Martin also confirmed the peaking tone sandhi pattern ([LHL]) that I had found when three-mora nouns that had underlying $/ \mathrm{LH} /$ and $/ \mathrm{HH} /$ patterns were used in certain contexts (to be discussed in $\S \S 12.10$ and 12.13).

Martin used acoustic analysis software (Praat) to analyse various other acoustic phenomena too, such as the effect of tone and length on vowel quality, and (of importance to this current study) she measured the duration of short vowels and long vowels. In particular, her analysis (Martin 2016:55-56) shows the following.

- The five short vowels each averaged around $105-115 \mathrm{~ms}$ (without regard to syllable position).
- The four of the long vowels each averaged around 180-200 ms (not quite twice the length of the short vowels), and the long /u/ vowel was well over 200 ms on average. (Again, this is without regard to syllable position.)
- The five vowels (without regard to phonemic length) each averaged around $76-96 \mathrm{~ms}$ in initial and medial syllables, and $150-180 \mathrm{~ms}$ in final syllables double the length of non-final syllables.

As part of this present study, I refine and continue some of Martin's investigations by using her published data (as well as other data that I have obtained separately), to clarify the vowel duration differences that occur for long and short vowels in different syllable positions, as well as to simplify the complicated surface tone patterning found by Martin in longer nouns.

### 12.2 Methodology

I have analysed a range of nouns of one, two, and three syllables, in various environments - in isolation, in frames (carefully designed phrases and sentences), and in general discourse. Much of the elicited material comes from Samson Aumarie (pronounced [aumari]) (SA) of Ubuo village, with some support in some recordings from Ikupu Gigimai (IG), of Bavi village (but living in Ubuo). I have supplemented this data with various other recordings of other speakers, especially from survey wordlists (Freedman and Hope 2016), natural oral story recordings (Schulz, p.c.), children's story book readings that both Schulz and I have recorded, and some Bible translation read by Tompkin Aumarie (recorded by Deborah Petterson).

I used Praat software to help transcribe from these same recordings by ear. In doing this, I found it better for pattern discovery to refrain from categorising the pitches into either H or L tones too early in case important nuances were missed, and to avoid the proliferation of tone patterns that Martin found. I also used softwaregenerated pitch traces to inform my aural transcriptions, and, like Martin, I took pitch and duration measurements for objective data for utterances of interest.

### 12.2.1 Notation

Lexical representations. Snider observes that "for tone languages, the domain of the [contrastive pitch] pattern is the morpheme" (2018:3), and indeed, for Kope the four underlying tone patterns $/ \mathrm{HH} /$ (level), /HL/ (falling), /LH/ (rising), and /LHL/ (peaking or rising-falling) apply to whole morphemes, rather than to syllables or segments. Although I do show the individual tones over each vowel when discussing the derivations of tone patterns, when I categorise a word or morpheme by its underlying tone I like to write the complete pattern as a unit, distinct from the consonant and vowel segments, so that it can be quickly identified. In order to keep things neatly on one line, I write it after the morpheme as a superscript, for example, hepato $^{\mathrm{HH}}$ 'ear', pito ${ }^{\mathrm{HL}}$ 'cuscus (an animal)', umu $^{\text {LH }}$ 'dog', korobo $^{\text {LHL }}$ 'wind'; I refer to such a format as the "lexical representation", since it may prove useful for a complete phonological description of a Kope word in the lexicon. ${ }^{2}$ The superscripts are sometimes omitted in this paper, however, if they would create unnecessary clutter.

[^21]Kope has some morphemes that appear to have no underlying tone, and such morphemes will be identified using a superscript zero in their lexical representation, e.g. $-i^{\varnothing}$ 'DET'

The level tone pattern. While I note that an underlying high tone pattern is often analysed as a single underlying tone $/ \mathrm{H} /$ in other languages described in the literature, I find that for Kope this tone is better represented as $/ \mathrm{HH} /$ because its flat, level contour or shape seems to be as important a feature of the pattern as its height in Kope, necessitating a $[\mathrm{H}]$ surface tone on at least two moras. For example, the Kope word for 'sore', with isolation form [úßá], is best analysed as having an underlying $/ \mathrm{HH} /$ tone pattern, shown by the lexical representation $u m a^{\mathrm{HH}}$, rather than $* u m a^{\mathrm{H}}$; likewise the Kope word for ' 3 rd person singular', with isolation form [nú:], is best analysed as having an underlying $/ \mathrm{HH} /$ tone pattern, shown as $r u u^{\mathrm{HH}}$, rather than ${ }^{*} r u u^{\mathrm{H}}$. (The proclivity for Kope to preserve the level tone pattern over two moras is discussed more extensively below, especially in $\S \S 12.10$ and 12.13.)

Finer gradations. A further matter of notation relates to the practice of using mainly just H and L to represent high and low tones during analysis of tone patterns commonly seen in the literature (e.g. in Martin 2016, or Newman and Petterson 1990). I have found, however, that there are intermediate surface pitch levels in Kope that are important to recognise.

There are two good options available for showing finer gradations of tone in phonetic transcriptions: (a) using the five diacritics available in the Doulos SIL font (ä, á, ā, à, ä) in phonetic transcriptions, or (b) using the bar system, also available in the Doulos SIL font ( ${ }^{------\_\_}$).

I use (a) when appropriate, but when it is important to show the tone patterns clearly on long vowels, I find it useful to expand the long vowel to a double one in such transcriptions e.g. [nú:] may be written as [núú], [tèté:i] as [tètéèi]. I also use (b) when it is useful to separate the pitch tier from the segmental tier.

Upsteps and downsteps. Since I start with H and L to describe the underlying tone pattern (UTP), it is advantageous to keep using H and L during derivations as each rule is applied. This necessitates the addition of some other symbols to show the changes taking place. One is to show "extra high" as ${ }^{\wedge} \mathrm{H}$. Another involves the use of arrows ${ }^{\uparrow}$ and ${ }^{\star}$ to show upstepping and downstepping register changes. In Kope, however, there are two kinds of downstep that need to be differentiated - one, which I represent by ${ }^{\downarrow}$, where the downstepped tone starts below the pitch of the preceding
tone, and another, which I represent by $\stackrel{\downarrow}{\perp}$, where the downstepped tone starts at the same pitch level as the preceding tone. Thus, $\mathrm{HL}^{\downarrow} \mathrm{HL}$ (and also $\mathrm{H}^{\downarrow} \mathrm{H}^{\downarrow} \mathrm{HL}$ and $\mathrm{HL}^{\downarrow} \mathrm{L}^{\downarrow} \mathrm{L}$ ) will correspond to an intermediate or surface form like $\left[-_{-}{ }_{-}\right.$], whereas $\mathrm{HL}_{=}^{\downarrow} \mathrm{HL}$ will correspond to one like $\left[--_{-}\right]$.

The use of downstep arrows can get quite cluttered, and the results unclear, so I sometimes employ a simpler system involving $M$ for an intermediate, mid-pitched tone, and $>$ for any intermediate tone in a descending series of such intermediate tones. Thus I sometimes show $\mathrm{HL}^{\downarrow} \mathrm{HL}$ (or $\mathrm{H}^{\downarrow} \mathrm{H}^{\downarrow} \mathrm{HL}$ or $\mathrm{HL}^{\downarrow} \mathrm{L}^{\downarrow} \mathrm{L}$ ) as $\mathrm{H} \gg \mathrm{L}$, and


A prosodic tier. In many of the sets of raw data presented in this paper I find it useful to show syllable locations, their surface tones, lengths and any stresses in one prosodic (or suprasegmental) tier, as these four phenomena are closely linked in Kope. I do this using the bar-notation and the normal IPA stress marks. For example, the prosodic tier of the form ['gēró'Rōī ${ }_{1}$ kà] 'it is the rat' would be ['- - ' — ${ }_{1}$ ], where it clearly shows that there are four syllables, the third one being long; it also shows that there is a rising-falling pattern with a peak on the second syllable, and that there are stresses on the first, third, and fifth syllables. The orthographic form (gero'oi-ka) can then be used underneath this, which makes the data more readable. For the sake of consistency, I also use the prosodic tier at the end of derivations.

Particles/clitics. For the sake of simplicity of notation, I have written the particles $k a$ 'DECL', ra 'INT', and bia 'not' as separate words in this paper, rather than as $=k a$, $=r a$, and $=b i a$ seen in other papers in this volume (showing their syntactic status as clitics). Consequently I refer to their combination with nouns as "phrases".

### 12.2.2 Frames

The frames chosen include phrases or clauses that one can reasonably assume are commonly used in parent-child interaction, and may be involved in how the child actually acquires the tone system. The frames use the following morphemes: $\mathrm{ara}^{\mathrm{LH}}$ or aire ${ }^{\text {LH }}$ 'this/here', $b i a^{\mathrm{HL}}$ 'not', $-i^{\varnothing}$ ' $\mathrm{DET}^{\prime}, k a^{\mathrm{HL}}$ 'DECL', moo $^{\mathrm{LH}}$ ' 1 SG ' $r a^{\mathrm{LL}}$ ' $\mathrm{INT}^{\prime}$, rautu ${ }^{\mathrm{HL}}$ 'with', and ruu ${ }^{\mathrm{HH}}$ ' 3 SG '.

- $<$ noun $>^{3}$

[^22]- <noun>-i ${ }^{8} k a^{\text {HL }}$ 'It is a/the <noun>'
- $<$ noun $>_{1}-i^{\varnothing}+<$ noun $>_{2}-i^{\varnothing} k a^{\text {HL }}$ 'it is the $<$ noun $>$ 's $<$ noun $>_{2}$ '.
- $\operatorname{ara}^{\mathrm{LH}} /$ aire ${ }^{\mathrm{LH}}<$ noun $>+r a^{\mathrm{LL}}$ 'Is this a [member of the category] <noun>?'
- $\left(i e^{\mathrm{HL}},\right)<$ noun $>+k a^{\mathrm{HL}}$ (Yes), it is a [member of the category] <noun>'
- $\left(a a^{\prime} a^{\mathrm{LHL}} / o o^{\prime} o^{\mathrm{LHL}},\right)<$ noun $>+b i a^{\mathrm{HL}}$ ' $(\mathrm{No}$,$) it is not a [member of the category]$ <noun>'
- $m o o^{\text {LH }}+$ noun $>+k a^{\text {HL }}$ 'it is my <noun>'
- $r u u^{\mathrm{HH}}+<$ noun $>+k a^{\mathrm{HL}}$ 'it is his $<$ noun $>$ '
- ruu ${ }^{\mathrm{HH}}+$ <noun> + rautut ${ }^{\mathrm{HL}} k a^{\mathrm{HL}}$ 'he has a <noun>'
- moo ${ }^{\text {LH }}+<$ noun $>+$ rautu $^{\mathrm{HL}} k a^{\mathrm{HL}}$ 'I have a <noun>'

Nearly all these frames include a particle which can also affect the tone of the noun(s). I found noun phrase data that did not include a particle by searching recorded audio of stories and various elicited sentences.

### 12.3 Tone patterns and mapping of nouns in isolation

In this section I first present some simple software-generated pitch traces (with waveforms) to show the basic surface tone patterns spoken in isolation, and summarise them using bar notations that reflect auditory impressions more simply.

The following pitch traces show the three tone patterns found on two-mora words, for monosyllabic words in Figure 1, and for disyllabic words in Figure 2.


Figure 1. Pitch traces of two-mora monosyllabic words with /HH/, /LH/, AND /HL/ TONE PATTERNS, SPOKEN IN ISOLATION (MALE SPEAKERS)


Figure 2. Pitch traces of Two-mora disyllabic words of /HH/, /LH/, AND /HL/ TONE PATTERNS, SPOKEN IN ISOLATION (MALE SPEAKER)

Note that the pitch traces show that the second syllable of $/ \mathrm{HH} /$ and $/ \mathrm{LH} /$ words ends on a fairly level pitch, and is perceptibly longer than the first syllable. (Kope people call this a "pulled" sound.) The second mora of the /HL/ tone word, however, is relatively short in duration.

With trisyllabic words a /LHL/ tone pattern can also be heard, e.g. in words such as $k o r o b o{ }^{\text {LHL }}$ 'wind'. Figure 3 shows pitch traces of examples of four tone patterns found on longer words.


Figure 3. Pitch traces of trisyllabic words of all four tone patterns
Note that a stepping descent of the falling tone pattern can be clearly seen in the graph of dodoro ${ }^{\mathrm{HL}}$.

Although the LHL pattern generally only occurs on words of three syllables, there are some disyllabic words with three moras that also have the /LHL/ pattern. Figure 4 shows the pitch trace for two such words, one with a long vowel in the second syllable, the other with a long vowel in the first. These are compared to a /HL/ word of similar syllable structure.


Figure 4. Pitch traces of disyllabic /LHL/ and /HL/ TONE WORDS WITH LONG VOWELS

While the peaking pattern on tetee ${ }^{\text {LHL }}$ is very clear, the one on oomo ${ }^{\text {LHL }}$ 'adze' is more subtle, but clearly contrasts with the falling tone pattern of goomo ${ }^{\mathrm{HL}}$ 'chest'. Note that although the graphs shows a fall on the second syllable of all three words, it is only perceptible as a contour on the longer second syllable of tetee ${ }^{\text {LHL }}$ in these examples. It appears that there is a constraint in Kope against pitch contours occurring on single moras, but pitch contours may occur on certain two-mora syllables. This is evidence that the mora is the tone bearing unit (TBU) in Kope, and that each TBU is associated with only one tone of a pattern. ${ }^{4}$

Longer /LHL/ words can also have the long L lead-in to the rise, just as /LH/ words do. The result of this is that the peak of the pattern occurs on the penultimate mora of the root. This is illustrated in the pitch traces for the two examples in Figure 5. (The suffix -i 'DET' on one of these words has no effect on the tone of the word, as will be demonstrated below in $\S 12.6$.)

[^23]
gaugaumuguru ${ }^{\mathrm{LHL}}-i$
[gàùgàùmù'gúrūì] 'the tadpole'

badaree ' $e^{\text {LHL }}$ [bādā'ré:?è] 'butterfly'

Figure 5. Pitch traces of multi-SYLLABLE /LHL/ TONE WORDS

Longer words are likely to be compounds or fossilised compounds, so the specification of their tones may be problematic. For example, gaugaumuguru ${ }^{\text {LHL }}$ 'tadpole' may contain the word muguru ${ }^{\text {LH }}$ 'puffer-fish' (which a tadpole resembles).

Not all monomorphemic four-syllable words have the long L lead-in; one monomorphemic word, /idomai/ ['īdó'ßāì] 'eye', has been found that has a surface tone pattern [MHML] with the peak on the second mora, rather than the penultimate. The pitch trace for this word is shown in Figure 6.

Peaking on the second syllable is also seen on some reduplicated words, for example darudaru ['dārú, dārù] 'yellow', ora'ora ['Rōrá,1̄ōrà] 'red', where the surface tone pattern for these words is also [MHML]. In §12.7 I show that this pattern commonly results from combining two $/ \mathrm{LH} /$ tone patterns words, where the second $/ \mathrm{LH} /$ inverts to an [HL], which is downstepped when the second word is not in focus (see Table 45 below). This is certainly the case for ora'ora 'red', which is clearly based on the $/ \mathrm{LH} /$ tone word ora ${ }^{\text {LH }}$ 'blood'. In this paper I will abbreviate this $/ \mathrm{LH} /-/ \mathrm{LH} /$ combination pattern as $/ \mathrm{LH}^{2} /$ and indicated it with a superscript LH 2 in the lexical representation of these words, for example, darudaru ${ }^{\text {LH2 }}$ 'yellow', ora'ora ${ }^{\text {LH2 }}$ 'red', bogobogo ${ }^{\text {LH2 }}$ 'white', temeteme ${ }^{\text {LH2 }}$ 'pain', and also for the non-reduplicated words oratoti ${ }^{\text {LH2 }}$ 'red' and idomai $^{\text {LH2 }}$ 'eye'.


Figure 6. Pitch trace of a peaking tone word with peak on $2^{\text {ND }}$ MORA

Much of the graphical data just presented will now be presented again in a compact, ordered way using bar notation. In this data set (and others to follow) syllable locations, their tones, lengths and any stresses will be shown in a prosodic tier above the orthographic form and glosses, as explained in the section on notation above.
(1) Representative surface tone and stress patterns found in isolation for nouns of various numbers of syllable, for each of the four main underlying patterns for monomorphemic nouns and pronouns.


| /LHL/ | $[->]$ | [-' - _ ] | [---'- |
| :---: | :---: | :---: | :---: |
|  | tetee | giidobu | gaugaumugurи |
|  | 'stranger' | 'barramundi' | 'tadpole' |

Note that the $/ \mathrm{HH} /$ tone nouns are pronounced high in pitch - there are no nouns that have a contrastive low level tone pattern (*/LL/), and there are no nouns with a dipping tone pattern $(* / \mathrm{HLH} /$ ).

Note also that /LH/ and /LHL/ tone words often sound as if they have a mid-pitch start ([ML] and [MHL]). (This will be examined more carefully in the next section.) The difference between the initial and final/L/ of /LHL/ words is peculiar to the pronunciation in isolation; in non-phrase-final positions, first and last tone values of /LHL/ patterns can often be heard at the same pitch, e.g. in the phrase gamara ${ }^{\text {LHL }}$ paira ${ }^{\mathrm{HH}}$ buka $^{\mathrm{HL}} i^{\varnothing}$ da ${ }^{\mathrm{HL}}$ [gāßárā ${ }^{\star}$ páírá ${ }^{\star}$ búkāī dà] (government name book-DET LOC) 'in the government register', the first and last tones of gamara ${ }^{\text {LHL }}$ 'government' are at the same level.

In (2) I present the $/ \mathrm{LH}^{2} /$ pattern on words of three different morphemic structures.
(2) Representative surface tone and stress patterns found in isolation for reduplicated and compound /LH/-/LH/ (/LH $/$ ) nouns, and a monomorphemic noun, all with a peak on the second mora.

$$
\begin{array}{lll}
{\left[1--I^{\prime}-\_\right]} & {\left[1--^{\prime}-\_\right]} & {[1-- \text { ' } /-1-} \\
\text { ora-'ora } & \text { ora-toti } & \text { idomai /idomai } \\
\text { 'red' } & \text { 'red' } & \text { 'eye' }
\end{array}
$$

Note that stress is on syllables one and three in all of these $\mathrm{LH}^{2}$ nouns, although I have a recording from one speaker whose pronunciation of idomai ${ }^{\text {LH2 }}$ 'eye' in isolation appears to place the stress on just the second syllable, the syllable with the peak pitch.

### 12.4 Mapping

A summary of the Kope tone patterns presented in (1) and (2) in terms of $\mathrm{L} / \mathrm{H}$ tone letters is shown in Table 44.

TABLE 44. EXtension of underlying tone patterns
OVER WORDS OF VARIOUS NUMBERS OF MORAS, WHEN SPOKEN IN ISOLATION

| Underlying Pattern | 2 moras | 3 moras | 4 moras |
| :---: | :---: | :---: | :---: |
| /HH/ | HH | HHH | $\dagger$ HHHH |
| /LH/ | LH | LLH | LLLH |
| /HL/ | HL | $\mathrm{H}^{\dagger} \mathrm{HL}$ | $\mathrm{H}^{\downarrow} \mathrm{H}^{\downarrow} \mathrm{HL}$ |
| /LHL/ |  | LHL | LLHL |
| /LH-LH/ (/LH ${ }^{2}$ ) |  |  | LH ${ }^{\downarrow} \mathrm{HL}$ |

$\dagger$ Extrapolated from similar data.
The mapping of the underlying two- and three-value tone patterns (i.e. all but /LH$\mathrm{LH} /$ ) on nouns and pronouns can be achieved by an initial association of tones to moras, as specified in (3), followed by the spreading of tones onto unassociated moras as specified in (4). These two rules help fulfil well-formedness conditions for Kope that require every TBU to be associated with a single tone, and that association lines do not cross. This stage is followed by a pitch adjustment to a certain sequence of tones, as specified in (5).
(3) Mapping stage 1: Associate (Abbreviation: Assoc)

Associate the last tone of the tone pattern of a morpheme with the last mora of the morpheme, the penultimate tone with the penultimate mora, and so on, right-to-left, until either tones or moras are used up.
(4) Mapping stage 2: Spread-Left

If there are moras to the left that are not yet associated with a tone, associate them with the left-most tone of the pattern.
(5) Interpolated fall (Abbreviation: Interpolate) - version 1 (see (11))

When a H tone is spread to the left, the tones between the leftmost H and a L on the right are interpolated into a graduated cascade from the H to the L. ${ }^{5}$

The interpolated fall of (5) could be interpreted as a series of automatic downsteps, i.e. $\mathrm{HHL} \rightarrow \mathrm{H}^{\downarrow} \mathrm{HL}, \mathrm{HHHL} \rightarrow \mathrm{H}^{\downarrow} \mathrm{H}^{\downarrow} \mathrm{HL}$, etc. The intermediate or surface effect is a series of descending intermediate tones between H and L , which, for better clarity, I

[^24]may write HML or $\mathrm{H}>\mathrm{L}, \mathrm{H} \gg \mathrm{L}$, etc (where $>$ represents a lower tone value, such as ${ }^{\downarrow} \mathrm{H}$ or L , as described in the section on notation above).

As for the matter of right-to-left versus left-to-right direction of association during mapping, consider the following:
i. Mapping of $/ \mathrm{LH} /$ words of three or four moras from right to left results in the correct LLH or LLLH, heard, for example, in [kèbàrí] 'tusk' and [bèrèbèré] 'lightning'. Mapping such words from left to right would result in the incorrect patterns *LHH and *LHHH.
ii. Mapping of /LHL/ words of four or five moras from right to left results in the pattern LLHL or LLLHL respectively for most of such words, for example, [gīī'dóbù] 'barramundi (fish)', [hū'?ūúrè] 'fly (insect)', [bādā 'rēé?è] 'butterfly', [gō?ā'gōó?à] 'frog' (LLLHL). Mapping such words from left to right would result in the incorrect patterns *LHLL and *LHLLL.

The evidence for right-to-left mapping in (ii) is less strong than that given in (i), because of the exceptional case of idomai ${ }^{\text {LH2 }}$ ['īdó' $\left.\beta \bar{i} i ̀\right]$ 'eye' mentioned above. The problem of how to deal with this outlier can be resolved, however, by treating it as if it were a compound, ? ido ${ }^{\text {LH }}-$ mail $^{\text {LH }}{ }^{6}$ In that case, the mapping of such $/ \mathrm{LH}^{2} /$ nouns is achieved by treating them as a combination of two individual /LH/ patterns, and carrying out the appropriate tone sandhi adjustments as well as mapping. (See (19) and (25) below.)

Before demonstrating the tone mapping process on some examples, it is good to codify how stress is assigned, as the two phenomena are clearly related. This is done in (6), which also covers the fact that stress is not perceived on words of $/ \mathrm{HH} /$ and $/ \mathrm{LH} /$ tone patterns when they are spoken in isolation. ${ }^{7}$

[^25](6) Isolation Stress
a. With words of a single tone pattern pronounced in isolation, stress is assigned to any syllable containing a non-final peak in pitch.
b. With /LH-LH/ tone pattern words, stress is assigned to the first syllable of each component pattern as a common alternative to subrule (a).

Here are some derivations of some of the words in (1) using these four rules:
(7) Tone pattern mapping derivations of representative nouns

| Noun Gloss | $\left\lvert\, \begin{aligned} & d u o^{\mathrm{HL}} \\ & \text { 'night' } \end{aligned}\right.$ | kakapi $^{\mathrm{HH}}$ <br> 'finger' | $\left\lvert\, \begin{aligned} & \text { kebariit }^{\text {LH }} \\ & \text { 'tusk' } \end{aligned}\right.$ | dodoro ${ }^{\mathrm{HL}}$ <br> 'bank' | $\begin{gathered} \text { go 'agoo' } a^{\text {LHL }} \\ \text { 'frog' } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| UTP <br> Assoc <br> Moras | $\begin{aligned} & \text { HL } \\ & \|\mid \\ & \mu \mu \end{aligned}$ | $\begin{gathered} \text { H H } \\ \|\quad\| \\ \mu \mu \mu \end{gathered}$ | $\begin{gathered} \text { L H } \\ \|\mid \\ \mu \mu \mu \end{gathered}$ | $\begin{array}{r} \text { HL } \\ \|\mid \\ \mu \mu \mu \end{array}$ | $\begin{array}{r} \text { LHL } \\ \|\|\mid \\ \mu \mu \mu \mu \mu \end{array}$ |
| UTP <br> Spread-Left <br> Moras | $\begin{aligned} & \text { H L } \\ & \|\mid \\ & \mu \mu \end{aligned}$ | $\begin{gathered} \text { H H } \\ \boldsymbol{i} \mid \\ \mu \mu \end{gathered}$ | $\begin{gathered} \text { L H } \\ i \mid \\ \mu \mu \mu \end{gathered}$ | $\begin{array}{r} \text { H L } \\ \text { i } \\ \mu \\ \mu \mu \end{array}$ | L H L $\mu \mu \mu \mu \mu$ |
| Result so far Interpolate | H L | H H H | L L H | $\begin{aligned} & \text { H H L } \\ & \mathrm{H}^{\star} \mathrm{H} \text { L } \end{aligned}$ | L L L HL |
| Result+Stress <br> Actual STP <br> Phonetic form | $\begin{aligned} & \text { 'H L } \\ & \text { [' } \backslash] \\ & {[\text { ['dúò }]} \end{aligned}$ | $\begin{gathered} \text { H H H } \\ {[---]} \\ {[\text { kákápí }]} \end{gathered}$ | $\begin{aligned} & \text { L L H } \\ & {[---]} \\ & {\left[\mathrm{kē} \mathrm{Ba}{ }^{2}{ }^{2}\right]} \end{aligned}$ | $\begin{gathered} \text { 'H > L } \\ {\left[{ }^{1-}-\quad\right]} \\ \text { ['dódōrò }] \end{gathered}$ |  |

### 12.5 Pitch and vowel duration measurements

Before exploring the tone patterns further, I first want to show the results of investigations into measurements made of two of the physical dimensions of tone, namely pitch (measured in Hertz) and vowel duration (measured in milliseconds).

### 12.5.1 Pitch and declination in 'isolation' tone patterns

I have already mentioned in connection with (1) how the initial L tones of the /LH/ and /LHL/ patterns are perceived as being spoken at a mid-range pitch, while the final L tones of the /HL/ and /LHL/ patterns are at a relatively low pitch when words are spoken in isolation. I investigated this further using the extensive data published in the appendix of Martin (2016). Figure 7 shows the variation in pitch differences in Martin's data between syllables in disyllabic words spoken in isolation, for each of
the two-value underlying tone patterns $/ \mathrm{LH} /$, $/ \mathrm{HH} /$, and $/ \mathrm{HL} /$. The height of each column represents the number of occurrences in the data for a certain pitch difference, and these pitch differences are calculated in terms of percentage change of the second pitch with respect to the first pitch. ${ }^{8}$


Figure 7. Histogram of surface tone differences between syllables for /HL/, /HH/, and /LH/ TONE PATTERNS WHEN SPOKEN IN ISOLATION (DISYLLABIC WORDS)

There is a slight overlap between level tone $/ \mathrm{HH} /$ and rarer occurrences of the other two patterns, but in general the level tone pattern sees only a slight drop or rise, the average being a $2 \%$ drop. The falling tone pattern $/ \mathrm{HL} /$, however, sees a large drop, $34 \%$ on average - in musical terms, about 7 semitones. The rising pattern $/ \mathrm{LH} /$, on the other hand, sees just a moderate rise, $16 \%$ on average - about 2.5 semitones. This smaller pitch difference explains why I often want to transcribe this pattern as [MH].

I also investigated the peaking tone pattern /LHL/ in a sample of 29 trisyllabic nouns in Martin's data. They have a pattern that includes an average pitch rise of $19 \%$ to the second syllable (three semitones), and an average pitch drop of $32 \%$ to the third syllable (nearly seven semitones), showing statistics similar to those for simple /LH/ and /HL/ tone patterns seen in disyllabic words. These measurements explain why I often want to transcribe the /LHL/ pattern as [MHL].

The higher pitching of initial L tones can be attributed to a phenomenon known as downdrift or declination which is "the general downward drift in F0 that occurs

[^26]throughout the duration of an utterance, even when the phonological tones of the utterance are all the same" (Snider 2018:72). For Kope we can say:
(8) Declination

A phrase-initial or -medial L tone (or sequence of L tones) is pitched higher than a phrase-final L tone. ${ }^{9}$

These facts also suggest ways for language researchers to correctly discern the tone of a Kope word spoken in isolation:

- A word with just a slight fall in pitch is probably a high-level tone word, since a real falling tone word has a very noticeable fall.
- Although a word with a slight rise could be a level tone word, it may well be a rising tone word. (The best test is to put it in a phrase with bia 'not', as the difference between a rise and a level is much more clearly heard there.)
- A word with an apparent [HHL] surface tone probably has an underlying peaking tone, rather than a falling tone, since the initial rise between first and second moras/syllables can be slight in a peaking tone, whereas with a falling tone there is a much larger pitch drop at the same point.


### 12.5.2 Pitch and vowel duration interactions in various frames

Using Praat software, I measured the pitch(es) and duration of each vowel in recorded phrases consisting of a noun in various simple frames. The frames were: the noun in isolation, and the noun followed by a clitic, where the clitic is one of $r a$ ' INT ', $k a$ 'DECL', or (in some recordings) bia 'not'. Each of the noun+clitic frames forms the predicate of a verbless clause (or sentence), and is the last element (or even the sole element) of such a clause (or sentence).

In this section I first go through sets of disyllabic nouns, showing how each tone pattern varies according to frame; then I go through sets of trisyllabic nouns in the same manner. In each case I first present a set of pitch traces for one illustrative noun of a given syllable structure and tone, illustrating how the tone pattern varies according to the frame. Then I present graphs of data averaged over a subset of such nouns, separating tonal melody and syllable length. The syllable lengths are characterised by vowel durations, measured in milliseconds. The tonal melodies are

[^27]presented on a semitone scale, being constructed using the averaged interval sizes between non-final syllables (shown as dots for each syllable), and between the beginning and end points of the final syllable (shown as a line joining two dots). (See Appendix 2 for further explanation about the transformation of the pitch data to a semitone scale.)

## a. Pitch and duration data of nouns with two short vowels

Figure 8 shows a set of typical pitch traces for a disyllabic $/ \mathrm{HH} /$ tone word in the four frames.


Figure 8. Pitch traces of a short /HH/ word in various frames

Figure 9 shows averaged tone melodies and vowel durations for three of the frames. Note that the syllable with the longest vowel in each of these phrases is always the last. Also, in the case of pronunciation in isolation, the vowel of the second (i.e. last) syllable is twice as long as that of the first syllable, but this syllable shortens right back when followed by a clitic. ${ }^{10}$ When a phrase ends in $k a$, the vowel of the clitic is also twice as long as that of the first syllable of the phrase; furthermore it has a long drop in pitch that starts at the height of the last vowel of the preceding noun, and drops about 10 semitones. When a phrase ends in $r a$, the vowel of the clitic is only

[^28]about $50 \%$ longer than that of the first syllable, and the pitch drop starts much lower and is much shorter (only 6 semitones). ${ }^{11}$

Pitches and Pitch Contours (HH)

$\mathrm{n}=7$ (one speaker)
Figure 9. MEAN PITCHES (ON SEMITONE SCALE) AND DURATIONS (MS) FOR VOWELS OF DISYLLABIC /HH/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH CLITICS $R A$ 'INTERROGATIVE', AND $K A$ 'DECLARATIVE'

Figure 10 shows a set of typical pitch traces for a disyllabic /LH/ tone word in the four frames, and Figure 11 summarises the melody and vowel duration data measured for a set of such words.


Figure 10. Pitch traces of a short /LH/ WORD in various frames

[^29]

Figure 11. Mean pitches (on Semitone scale) and durations (ms) for vowels of DISYLLABIC /LH/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH CLITICS RA 'INTERROGATIVE', AND $K A$ 'DECLARATIVE'

Apart from the lower pitch of the first vowel of the noun, all other measurements for / $\mathrm{LH} /$ words and associated clitics are much the same as for $/ \mathrm{HH} /$ words.

Figures 12 and 13 show a very different situation for falling tone words:


Figure 12. Pitch traces of short /HL/ WORDS In Various Frames

Pitches and Pitch Contours (HL)


Figure 13. MEAN Pitches (ON SEMITONE SCALE) AND DURATIONS (MS) FOR VOWELS OF DISYLLABIC /HL/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH CLITICS $R A$ 'INTERROGATIVE', AND $K A$ 'DECLARATIVE'

Note that the difference between the vowel durations of the first and second syllables in /HL/ nouns when spoken in isolation is not as much as that found in the /LH/ and $/ \mathrm{HH} /$ nouns - but the sum of those measurements is about the same (240-250 $\mathrm{ms}) .{ }^{12}$ Note also that both clitics start low in pitch with a barely perceptible fall at the end. The vowel durations of the clitics, especially $k a$, are also short.

In summary, so far we have observed the following.

- If a noun ends in a syllable with a [H] tone, that syllable is lengthened to the equivalent of two moras, when pronounced in isolation.

[^30]- The clitic $k a$ 'DECL' is also lengthened to the equivalent of two moras when it has a deep [HL] pitch contour.
- The final syllable of the noun and the clitic $r a$ ' INT ' are both lengthened somewhat when they have a shallow [ML] pitch contour.
- Both clitics $k a$ and $r a$ have a vowel duration equivalent to one mora when they have no contour, or the barest of contours (i.e. they are just a simple low [L], or [L] and trailing downward).
- $K a$ often sounds like it has a light stress, but $r a$ is never stressed.


## b. Pitch and duration data of nouns with three syllables

Pitch traces of an example of a/LH/ word with three syllables is shown in Figure 14, and an averaged summary of the measurements made for a small sample of such words is shown in Figure 15.


Figure 14. Pitch traces of a Long/LH/ word in various frames

Note that with these three-mora nouns, the underlying/LH/ tone pattern is mapped to just the first two moras of the noun before a single-mora $r a$ and $k a$, but is spread over the whole word in isolation and before the 2-mora bia.

I found that this same patterning occurs with disyllabic nouns when the first syllable has two moras, e.g. baagi ${ }^{\text {LH }}$ 'fruit bat' in isolation is [bāāgí], but with $k a^{\mathrm{HL}}$ 'DECL' added it is [bāágī kà], with the underlying /LH/ tone of the noun expressed on the first two moras of the noun and the downstepped fall of the / $\mathrm{HL} /$ tone expressed partly on the third mora of the noun, and partly on the particle itself. This suggests a rearrangement of the associations between tones and moras, which is explored in §12.10.

Pitches and Pitch Contours (LH)


$$
\mathrm{n}=4 \text { (two lexical items, two speakers) }
$$

Figure 15. Mean pitches (on Semitone scale) and durations (MS) for vowels of TRISYLLABIC /LH/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH CLITICS RA 'INTERROGATIVE', KA 'DECLARATIVE', AND BIA 'NEGATIVE'

Similar changes occur with three-mora $/ \mathrm{HH} /$ words, including maintenance of the level tone pattern on at least two moras.

kakapi ${ }^{\mathrm{HH}}$ 'a finger'
kakapi ${ }^{\text {HH }}$ ra
'Is it a finger?'
kakapi ${ }^{\text {HH }} k a$ 'It is a finger.'
kakapi ${ }^{\mathrm{HH}}$ bia 'It is not a finger.'

Figure 16. Pitch traces of a Long /HH/ word in various frames

Pitches and Pitch Contours (HH)

$\mathrm{n}=3$ (two lexical items, one or two speakers)
Figure 17. MEAN Pitches (ON SEmitone scale) and durations (MS) for vowels of TRISYLLABIC /HH/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH PARTICLES RA 'INTERROGATIVE', KA 'DECLARATIVE', AND BIA 'NEGATIVE'

Figure 18 shows the pitch traces for a/HL/ word with three syllables. Note that in the frames with $k a$ and bia the third syllable of the noun stem is slightly different because the article was added in those particular utterances; this affects the length of this syllable, but not the tone.


Figure 18. Pitch traces of a Long /HL/ WORD IN VARIOUS FRAMES

Figure 19 shows the data for another /HL/ noun in the same frames. This word (gii'epu 'throat') contains a long first syllable, but a consistently short third syllable. ${ }^{13}$

Pitches and Pitch Contours (HL)


Figure 19. MEAN pitches (ON SEmitone scale) and durations (ms) for vowels of the trisyllabic /HL/ NOUN GII'EPU ‘THROAT’ IN VARIOUS FRAMES - IN ISOLATION AND WITH PaRTICLES RA 'INTERROGATIVE', KA 'DECLARATIVE', AND BIA 'NEGATIVE'

An important point to note is that the two-mora particle bia retains its length, even though it has a much shorter drop after a / $\mathrm{HL} /$ word than it does after a $/ \mathrm{LH} /$ or $/ \mathrm{HH} /$ word.

Lastly, with a three-mora word length the /LHL/ pattern is possible. Figure 20 shows the pitch traces for such a word, and Figure 21 the averaged pitch and duration data for a small sample of words.

[^31]

Figure 20. Pitch traces of a/LHL/ word in various frames

## Pitches and Pitch Contours (LHL)



Vowel Durations

$\mathrm{n}=3$ (two lexical items, one or two speakers)
Figure 21. MEAN Pitches (ON SEmitone scale) and durations (MS) For vowels of TRISYLLABIC /LHL/ NOUNS (ONE MORA PER SYLLABLE) IN VARIOUS FRAMES - IN ISOLATION AND WITH PARTICLES $R A$ 'INTERROGATIVE', $K A$ 'DECLARATIVE', AND BIA 'NEGATIVE'

The data presented in this section has confirmed that the mora is the tone bearing unit of Kope. The data has also confirmed that a tone pattern in Kope consists of at least two tones (including $/ \mathrm{HH} /$ ), and any such tone pattern may spread over a larger number of TBUs than there are tones in the pattern, but it may not compress into fewer than one TBU per tone. In other words, while there is a one-to-one or one-tomany relationship between a tone and its associated TBUs, a many-to-one relationship is not possible.

This data has also shown that it is common for a phrase-final syllable to be lengthened by an additional mora, especially when part of the tone pattern associated with that syllable includes a high-pitched H tone.

The variable length and tone patterning of particles $k a$ and $r a$ (as opposed to bia) will be discussed further in $\S 12.10$.

### 12.6 Tone patterns of nouns with an article suffix (-i)

Kope has an article $-i$ 'DET'. Without the article a noun would refer to generic membership of a class, rather than to an instance of that class, e.g. aire pito ka (this cuscus DECL) 'this is a cuscus (as opposed to another kind of animal)'. By using the article the speaker figuratively points to a particular instance of that class, e.g. aire pito-i $k a$ 'this is the cuscus (this cuscus-DET DECL)'.

The article is used a lot in Kope, and since I have included many phrases gleaned from recorded discourse in this paper, it is important to study its effect on tone patterns. It appears, in fact, to have a very limited effect on the tone pattern of a word spoken in isolation, merely lengthening the last syllable and copying the last element of the tone of the word. For example:

| Plain form | Form with -i 'det' |
| :---: | :---: |
| [dúbú] | [dúbúí] |
| [àdỉßó] | [àdỉßóí] |
| [pítò] | [pítòi] |
| [hīßíò] | [hī $\beta$ íoì] |

When a high tone is copied to the article, it continues on the same level; when a low tone is copied to the article it continues as a falling contour (when the word is spoken in isolation). Because the article does not seem to have a tone of its own (until attached to a word), for the purpose of the lexicon I mark the article as having 'zero' tone, $-i^{\varnothing}$. The association of a tone to a zero-tone suffix can be expressed thus:
(10) Spread right to zero tone (Spread-Right)

A suffix without an underlying tone is associated with and acquires the tone ( H or L ) of the immediately preceding mora.

$$
\varnothing \rightarrow \mathrm{T} / \mathrm{T}_{-}
$$

This also requires an update to the interpolated fall rule (of (5)), as when a low tone is spread to the right (e.g. over an article), it will become part of an interpolated long fall over a /HL/ word, or over the second part of a /LHL/ word:
(11) Interpolated fall (Interpolate) - final version

When mapping results in a series of H tones followed by a series of L tones, the tones between the leftmost H and the rightmost L are interpolated into a graduated descent from high to low.

$$
\begin{aligned}
& \left.H \mathrm{H} L \rightarrow \mathrm{H}^{\downarrow} \mathrm{H} L \text { (i.e. } \mathrm{H}>\mathrm{L}\right) /\{\# / \mathrm{L}\} \ldots \\
& \mathrm{H} \mathrm{~L} \mathrm{~L} \rightarrow \mathrm{H} \mathrm{~L}{ }^{\downarrow} \mathrm{L}(\text { i.e. } \mathrm{H}>\mathrm{L}) /\{\# / \mathrm{L}\} \ldots \# \\
& \mathrm{H} \mathrm{H} \ldots \mathrm{~L} \rightarrow \mathrm{H}^{\downarrow} \mathrm{H} \ldots \mathrm{~L}^{\downarrow} \mathrm{L}(\text { i.e. } \mathrm{H}>\ldots>\mathrm{L}) /\{\# / \mathrm{L}\} \ldots \# \\
& \text { (etc, where }>\text { is an intermediate tone value, and }\{\mathrm{A} / \mathrm{B}\} \text { indicates a } \\
& \text { choice between two options A and } \mathrm{B}) .
\end{aligned}
$$

Some further observations can be made at this point regarding syllable nucleus length after the addition of the article to a long vowel or diphthong. (Some of these have been mentioned before in footnote 10.)

- A short vowel in a phrase-final syllable of a noun is typically twice the length of a short vowel in a non-phrase-final syllable. In other words, a short vowel at the end of a phrase may gain a mora for the purpose of carrying intonation (see $\S 12.16$ ), e.g. oro ${ }^{\mathrm{HH}} k a^{\mathrm{HL}}$ ['óró 'káà\#] 'it is a thorn' vs oro $^{\mathrm{HH}}$ [óróó\#] 'a nipa palm' (where \# represents the end of a phrase).
- A long vowel or diphthong is typically two moras, but, again, it may gain an additional mora at the end of a phrase (for intonation), e.g. meree ${ }^{\mathrm{LH}} k a^{\mathrm{HL}}[\mathrm{me}$ 'rée , kà] 'it is a child' vs meree ${ }^{\text {LH }}$ [mērēēé] 'a child'.
- Inflection with the article -i may add a mora to the length of a short vowel, but there seem to be constraints on syllable length, such that non-phrasefinal syllables may be no longer than two moras, and phrase-final syllables no longer than three moras. This manifests as shortening of a non-phrasefinal long vowel when $-i$ is added, as seen in the underlined syllables in the following examples (where long vowels are expanded to show each mora):
(12)

| Plain form | Form with -i ' ${ }^{\text {deT }}$ ' |
| :---: | :---: |
| [mēreé] | [mērēēí] |
| [mēréé kà] | [mēréí kà] |
| [hóóhṑ̀] | [hóóhòòi] |
| [hóóhōō kà] | [hóóhōī kà] |

Note that this extra length given to phrase-final vowels of nouns for the purpose of bearing intonation will be ignored for the rest of the paper (except for the discussion on intonation in §12.16). The important take-away from this discussion is that Kope has a constraint on the weight of non-phrase-final syllables - they cannot exceed two moras.

## (13) Two-mora syllable nucleus constraint (2-Mora-Limit)

A non-phrase-final syllable is limited to two moras in weight.
If there are more than two moras, then a reduction takes place.
Examples of reductions are the reducing of a long vowel to a short vowel, as illustrated above; or a vowel may be elided (e.g. /odau-i/ $\rightarrow$ /odai/ 'going'); or else the syllable concerned may be split into two shorter syllables (e.g. /ro.?oa-i/ $\rightarrow$ /ro.?o.ai/ 'the rock' as in [nó?ó'áí gī' $\beta$ írī] 'a stony ridge' (see (15)), where stress is applied in the middle of the three-mora vowel sequence.

### 12.7 Tone sandhi in two-word noun phrases - data

In recorded oral stories the same tone combination in a phrase can result in very different surface patterns, depending on which word of the phrase is in focus. In general, phrases have at least one word in them that has the following characteristics which, it is reasonable to assume, are phonetic realisations of pragmatic focus:
i. a clearer preservation of the tone pattern;
ii. a higher pitch on an $[\mathrm{H}]$ tone;
iii. a stronger stress on a stressed syllable.

I have compiled two example sets of two-word phrases from recorded narratives where at least one of the words shows these characteristics of focus. Those in (14) show focus on the first word (at least), and those in (15) show it on the second word (at least). Due to unavoidable data limitations, some of the phrases, as it has turned out, appear to have focus on both words; and some of the phrases have other words or particles in them too - these latter are included (in parentheses) as they can also affect the pitch of a neighbouring word.
(14) Examples of surface tones and stress as a result of tone sandhi in two-word phrases where there is a focus on word 1
$1^{\text {st }}$ word: /HH/[+Foc]

| +/HH/ | +/LH/ | + /HL/ | +/LHL/ |
| :---: | :---: | :---: | :---: |
| $\left[-1-{ }^{\prime}--\right]$ <br> ro'oa kopi rock lump 'stone' | $\left.\left[{ }^{1--}\right)^{\prime}-\ldots\right]$ <br> oto tama-i foot skin-DET 'sandals' | [1- - - _-] <br> urio made-i <br> spirit word-DET <br> 'spiritual word' | $\left[{ }^{1--} \text { ' }-(-)\right]$ <br> dubu gaa'u (ro) <br> man one (NOM) <br> 'one man (acted)' |

$1^{\text {st }}$ word: $/ \mathbf{L H} /[+\mathbf{F o c}]$

| +/HH/ | +/LH/ | + /HL/ | +/LHL/ |
| :---: | :---: | :---: | :---: |
| $[(--)-1 \quad 1--]$ <br> (ara) hepu-i uubi-i <br> (this) earth-DET folk-DET <br> '(this) earth's people' | [- '- - ' ( ) ] <br> bo'u meree (ro) <br> who child (NOM) <br> 'whose child' | [1-- $]_{-}^{-}(\mathrm{O})$ rimo rautu (ka) 1PL with (DECL) '(is) with us' | $\left[1_{1}^{--1---1}\right]$ <br> aa'o himio-i that day-DET 'at that time' |

$1^{\text {st }}$ word: /HL/[+Foc]

| +/HH/ | +/LH/ | +/HL/ | +/LHL/ |
| :---: | :---: | :---: | :---: |
| [1--- .---] <br> reto'a dubu <br> two man <br> 'two men' | $\left[\begin{array}{lll} {[--} & 1- & - \end{array}\right]$ <br> kori mate-i <br> corn seed-DET <br> 'corn seedlings' | $\qquad$ <br> hibaa maати-i crocodile mother-DET 'mother crocodile' | $\left[\begin{array}{l} {[---\quad-\quad-\quad]} \\ \text { reto'a } \text { gaa'u } \\ \text { two one } \\ \text { 'three' } \end{array}\right.$ |

$1^{\text {st }}$ word: $/ \mathbf{L H L} /[+$ Foc $]$

| +/HH/ | +/LH/ | + /HL/ | +/LHL/ |
| :---: | :---: | :---: | :---: |
| $\left[\begin{array}{lll}-1-- & -1-\end{array}\right]$ imatomudio dubu(o) teaching man (VOC) '(oh) teacher!' | $\left[\left[^{\prime}-{ }^{-}-\quad,--\quad\right]\right.$ <br> gaa'ubuo тегее one-DIM child 'one fellow' | $\qquad$ <br> pariki-i hooho-i hall-DET face-DET 'before the hall' | $\begin{aligned} & [---1----]] \\ & \text { himio aami'a-i } \\ & \text { day some-DET } \\ & \text { 'some days' } \end{aligned}$ |

It is apparent from this data that, when the first word is in focus and the second word is not, there are four important principles at play:
i. the first word keeps its tone pattern;
ii. there is a downstep to the tone pattern of the second word;
iii. if the second word has an underlying /LH/ pattern, then it changes to HL;
iv. there is a tendency for the other second word tone patterns to flatten to avoid dips, and to fall at the end.

In Table 45 I have regularised the patterns found in (14), based on those four principles. (The slash indicates there are two options for some outcomes.)

TABLE 45. TONE SANDHI IN TWO-WORD PHRASES, FOCUS ON WORD 1 ;
also showing surface tone patterns

| Patterns | +/HH/ | +/LH/ | +/HL/ | +/LHL/ |
| :---: | :---: | :---: | :---: | :---: |
| /HH/[+Foc] |  | $\left.\begin{array}{cc}\mathrm{HH} & \\ \\ {\left[{ }^{--} \mathrm{HL}\right.} & - \\ \hline\end{array}\right]$ | HH ${ }^{\text {² }} \mathrm{HL}$ <br> $\mathrm{C}^{--}$ | $\begin{array}{cc}\mathrm{HH} & \text { 'HHL } \\ {\left[^{--}\right.} & --\quad-]\end{array}$ |
| /LH/[+Foc] | $\begin{array}{cc}\text { LH } & \text { ²HH/HL } \\ {[--} & --/-\quad]\end{array}$ | LH  <br>   <br> $[--$  <br>  - | LH  <br>   <br> $[--$ - | $\begin{array}{cc} \text { LH } & { }^{ } \mathrm{HHL} \\ {[--} & -- \end{array}$ |
| /HL/[+Foc] | HL ${ }^{\text {TH }} \mathrm{H} / \mathrm{HL}$ $\left[\begin{array}{ll} -- & --/-- \end{array}\right]$ | $\begin{array}{cc} \mathrm{HL} & \mathrm{yL} \\ {\left[^{--}\right.} & \left.-\_\right] \end{array}$ | $$ | $\begin{array}{cc} \mathrm{HL} & { }^{\mathrm{H} H L} \\ {\left[{ }^{--}\right.} & \left.--\_\right] \end{array}$ |
| /LHL/[+Foc] | LHL ${ }^{\text {THH/HL }}$ $\left[----_{-}\right]$ | $$ | $\begin{array}{cc} \text { LHL } & \text { 'HL } \\ {[---} & --] \end{array}$ | $$ |

Now turning to the case where word 2 is in focus:
(15) Examples of surface tones and stress as a result of tone sandhi in two-word phrases where there is a focus on word 2
$1^{\text {st }}$ word: /HH/

| +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: |
| [-- '— $\backslash]$ <br> dubu geema-i man big-DET 'a big man' | $\left[\begin{array}{lll}1--1 & (- & )\end{array}\right]$ <br> pata raa (geema) <br> swamp fish (big) <br> '(big) swamp fish' | $\begin{aligned} & {[-1-} \\ & \text { [1 } \\ & \text { ruu hooho-i } \\ & \text { 3SG face-DET } \\ & \text { 'his face' } \end{aligned}$ | [- -- ----] <br> ro’oa-i gimiri (pa-) <br> rock-DET ridge <br> '(fix) a stony ridge' |

$1^{\text {st }}$ word: /LH/

| +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & {[1--1--]} \\ & \text { aire dubu-i } \\ & \text { this man-DET } \\ & \text { 'this man' } \end{aligned}$ | [-- - ' $]$ <br> ara meree-i this child-DET 'this child' | [1-- ${ }^{1-}$ ] <br> rimo abea-i <br> 1PL father-DET 'our father' | $\left[\begin{array}{ll} 1 \\ 1 & - \\ - \end{array}\right]$ <br> raa aami'a-i fish some-DET 'other fishes' |

$1^{\text {st }}$ word: /HL/

| +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: |
| ['--- '- - (-)] <br> retoa dubu (ro) two man (NOM) 'two men' | $\left[\begin{array}{ll} {[-1-} & - \\ \dagger \text { tata } & \text { mereee- } i \\ \text { other child-DET } \\ \text { 'a fellow' } \end{array}\right.$ | ['- ।- _] <br> kori hura corn fruit 'corn seed' | $\left[\begin{array}{ll}1-- & 1-- \\ -1\end{array}\right]$ <br> ata himio-i other day-DET 'another day' |

$1^{\text {st }}$ word: /LHL/

| +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: |
| [1--'- '- _] |  | $\left[-{ }^{--} \quad 1-\quad-\right]$ | [-- $\left.{ }^{-}{ }^{-}, \square\right]$ |
| Ioridara oomo-i | Baamii meree-i (ka) | kokoro maamu-i | himio aami'aa |
| Jordan river-DET | Bavi child-DET (DECL) | chicken mother-DET | day some |
| 'Jordan River' | 'Bavi boys' | 'the hen' | 'some days' |

$\dagger$ The rise at the end of this phrase is due to intonation.
When the second word is in focus and the first word is not, the four main principles are:
i. if the first word's tone pattern is $/ \mathrm{LH} /$ it changes to LL , and the second word retains its underlying tone, ${ }^{14}$
ii. in all other cases, the tone pattern of the first word is greatly reduced in range;
iii. there is an upstep to the second word, which then tends to fall away in pitch;
iv. there is a tendency to avoid dips.

[^32]In Table 46 I have regularised the patterns found in (15):
TABLE 46. TONE SANDHI IN TWO-WORD PHRASES, FOCUS ON WORD 2; ALSO SHOWING RESULTING SURFACE TONE PATTERNS

| Pattern | +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { /HH/ } \\ & {[-\mathrm{Foc}]} \end{aligned}$ | HH ${ }^{\top} \mathrm{HH} / \mathrm{HL}$ $[-->---]$ | HH <br> $[--$ <br> $[-$ | HH  <br>   <br> $[--$  <br> $-\quad$  | $\begin{array}{cl} \mathrm{HH} & { }^{\uparrow} \mathrm{HHL} /{ }^{\uparrow} \mathrm{LHL} \\ {[--} & \left.--{ }^{-}-_{-}^{-}\right] \end{array}$ |
| $\begin{gathered} \text { /LH/ } \\ {[-\mathrm{Foc}]} \end{gathered}$ | $\begin{array}{ll}\text { LL } & \mathrm{HH} / \mathrm{HL} \\ {[--} & --/--]\end{array}$ | $\begin{array}{cc}\text { LL } & \text { LH } \\ {[--} & \left.-{ }^{-}\right]\end{array}$ | LL HL <br> $[--$ - <br> -  | $\begin{array}{cc} \text { LL } & \text { LHL } \\ {[--} & \left.--_{-}\right] \end{array}$ |
| $\begin{aligned} & \text { /HL/ } \\ & {[-\mathrm{Foc}]} \end{aligned}$ | $\mathrm{HH}{ }^{\top} \mathrm{HH} / \mathrm{HL}$ $\left[-->--_{-}\right.$ | HH <br>  <br> $[--$ | $\mathrm{HH}{ }^{\text {¢ }} \mathrm{HL}$ $[--\quad-\quad]$ | $\begin{array}{cc} \mathrm{HH} & { }^{\uparrow} \mathrm{HHL} /{ }^{\uparrow} \mathrm{LHL} \\ {[--} & --{ }^{-}--_{-} \end{array}$ |
| $\begin{aligned} & \text { /LHL/ } \\ & \text { [-Foc] } \end{aligned}$ |  | $\begin{array}{cc} \text { LHH } & { }^{\dagger} \mathrm{HL} \\ {[---} & -\quad] \end{array}$ | $\begin{gathered} \text { LHH }{ }^{\uparrow} \mathrm{HL} \\ {[---\quad-\quad]} \end{gathered}$ | $\begin{aligned} & \text { LHH }{ }^{\top} \mathrm{HHL} / \mathrm{L} \mathrm{LHL} \\ & {\left[-----{ }^{--}\right]} \end{aligned}$ |

To understand what is happening when there is likely to be an equal balance of focus between the components of a two word phrase, a more controlled approach is needed. In (16) I present possessive noun phrase data elicited in declarative clauses. In these phrases both possessor and possessee nouns are marked by $-i$ ' DET ', and the clause concludes with the declarative marker $k a$ ' DECL ', for example, oobo-i uma-i $k a$ (woman-DET sore-DET DECL) means 'it is the woman's sore'.
(16) Tone sandhi in possessor-possessee declarative clauses, organised by possessor noun + possessee noun tone combinations
$1^{\text {st }}$ word: /HH/ oobo 'woman'

| $\begin{aligned} & +/ \mathbf{H H} / \\ & +u m a \text { 'sore' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H} / \\ & + \text { obo 'water' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{H L} / \\ & + \text { moto 'house' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H L} / \\ & + \text { gero'o 'rat' } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| [-— - - - - ] <br> ooboi umai ka | $[1--1-\ldots,]$ <br> ooboi oboi ka | $[1-\quad-\quad 1-1-]$ <br> ooboi motoi ka | $\left[\begin{array}{lll} {[-\infty} & -- & -1 \end{array}\right]$ <br> ooboi gero 'oi ka |

$1^{\text {st }}$ word: /LH/ umu 'dog'

| $\begin{aligned} & +/ \mathbf{H H} / \\ & +u m a \text { 'sore' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H} / \\ & +o b o \text { 'water' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{H L} / \\ & + \text { moto 'house' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H L} / \\ & + \text { gero'o 'rat' } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| $\left[1_{1}-1-\sim_{1}\right]$ <br> uтиі umai $k a$ | $\left[\begin{array}{c} {\left[\left[_{-}-1--1-\right.\right.} \\ \text { umui oboi } k a \end{array}\right]$ | $\left[1--1-\sim_{1},\right]$ <br> umui motoi ka | $\left[\begin{array}{cc} {\left[1_{1}-\right.} & \text { I-- } \\ \text { umui gero'oi } k a \end{array}\right]$ |

$1^{\text {st }}$ word: /HL/ pito 'cuscus'

| $\begin{aligned} & +/ \mathbf{H H} / \\ & + \text { uma 'sore' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H} / \\ & + \text { obo 'water' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{H L} / \\ & + \text { moto 'house' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H L} / \\ & + \text { gero'o 'rat' } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| $\left[{ }^{1-}-1-\ldots, 1\right]$ pitoi umai ka | $\left[{ }^{\prime-}-{ }^{\prime}-\ldots, \ldots\right.$ <br> pitoi oboi ka | $\left[\begin{array}{lll} {[-\infty} & - & -1 \end{array}\right]$ <br> pitoi motoi ka | ['—— '- - —, $]$ pitoi gero'oi ka |

$1^{\text {st }}$ word: /LHL/ tetee 'stranger/foreigner'

| $\begin{aligned} & +/ \mathbf{H H} / \\ & +u m a \text { 'sore' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H} / \\ & + \text { obo 'water' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{H L} / \\ & + \text { moto 'house' } \end{aligned}$ | $\begin{aligned} & +/ \mathbf{L H L} / \\ & + \text { gero'o 'rat' } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| $\left[-1 \sim-\sim_{1}\right]$ <br> teteei umai ka | $\left[\begin{array}{lll} {[-1} & -\infty \\ \text { teteei oboi } \mathrm{ka} \end{array}\right]$ | $[-1 \infty,-\cdots, 1]$ <br> teteei motoi ka | $[-1 \sim,--\infty, \ldots$ <br> teteei gero'oi ka |

Of particular interest is the fact that the last syllable of word 1 and the first syllable of word 2 are at the same pitch level (or very close to it) in every case, even when there is a downstep from a L to a H across the word break.

I have regularised what happens in these clauses in Table 47. To show the "level downstep" I use a downstep arrow with an equal sign under it $(\stackrel{\downarrow}{=})$, so $L_{\perp}^{\downarrow} \mathrm{H}$ manifests as [MM] (or something like [--]). This differentiates this kind of downstep from a descending downstep indicated by the normal downstep arrow ( ${ }^{\downarrow}$ ), which manifests as $\left[\mathrm{M}^{\downarrow} \mathrm{M}\right]$ (or something like $[--]$ ).

TABLE 47. TONE PATTERNS IN (TWO-WORD) POSSESSOR + POSSESSEE DECLARATIVE CLAUSES

| Pattern | $\begin{aligned} & +/ \mathbf{H H} /-\boldsymbol{i}^{\varnothing} \\ & \quad+\boldsymbol{k} \boldsymbol{a}^{\mathrm{HL}} \end{aligned}$ | $\begin{aligned} +/ \mathbf{L H} /-\mathbf{i}^{\varnothing} & \\ & +\boldsymbol{k} \boldsymbol{a}^{\mathrm{HL}} \end{aligned}$ | $\begin{aligned} +/ \mathrm{HL} /-\boldsymbol{i}^{\varnothing} & \\ & +\mathbf{k a}^{\mathrm{HL}} \end{aligned}$ | $\begin{aligned} +/ \mathrm{LHL} /-\boldsymbol{i}^{\varnothing} & \\ & +k \boldsymbol{a}^{\mathrm{HL}} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| /HH/-i ${ }^{\text {® }}$ | H.H H.L   <br>    <br> $[--$ - $L$ | H.H H.L ${ }^{\text {d }}$ L <br> $\left[--l^{-}\right.$ | H.H H.L ${ }^{\downarrow} \mathrm{L}$  <br> $[--$ - - | $$ |
| /LH/-i ${ }^{\text {® }}$ | $\left.\begin{array}{ccc}\text { L.H } & \text { H.L } \\ \\ {[--} & \mathrm{L}^{+} \\ & - & -\end{array}\right]$ | $\begin{aligned} & \text { L.H } \\ & \text { H.L }{ }^{\mathrm{L}} \mathrm{~L} \\ & {[--} \\ & - \end{aligned}$ | $\begin{array}{cc} \text { L.H } & \text { H.L }{ }^{\downarrow} \mathrm{L} \\ {[--} & -- \end{array}$ | $\left.\begin{array}{ccc} \text { L.H } & \text { H.H.L }{ }^{\downarrow} \mathrm{L} \\ {[--} & -- & - \end{array}\right]$ |
| /HL/-i ${ }^{\text {® }}$ | $\begin{aligned} & \text { H.L }{ }_{=}^{\downarrow} \text { H.L }{ }^{\downarrow} \mathrm{L} \\ & {[--\quad--\quad]} \end{aligned}$ | $\begin{aligned} & \text { H.L } \stackrel{\downarrow}{=} \text { H.L }{ }^{\downarrow} \mathrm{L} \\ & {[--\quad---]} \end{aligned}$ | $\begin{aligned} & \text { H.L } \stackrel{\downarrow}{=} \text { H.L }{ }^{\downarrow} \mathrm{L} \\ & {[--\quad---]} \end{aligned}$ | $\begin{aligned} & \text { H.L }{ }_{=}^{\downarrow} \text { H.H.L }{ }^{\mathrm{L}} \mathrm{~L} \\ & \left.\left.[]_{-}-\right]_{-}\right] \end{aligned}$ |
| /LHL/-i ${ }^{\varnothing}$ | $\left.\begin{array}{c} \text { L.H.L }{ }_{=}^{\perp} \text { H.L }{ }^{\downarrow} \mathrm{L} \\ {[---} \\ {[--} \end{array}\right]$ | $\begin{gathered} \text { L.H.L }{ }_{=}^{\downarrow} \mathrm{H} . \mathrm{L}{ }^{\downarrow} \mathrm{L} \\ {[---\quad--\quad]} \end{gathered}$ |  | $\begin{aligned} & \text { L.H.L }{ }_{=}^{\downarrow} \text { H.H.L }{ }^{\downarrow} \mathrm{L} \\ & {[---\quad---\quad]} \end{aligned}$ |

For the general balanced-focus noun phrase (not necessarily a possessive phrase in a declarative clause), the level downstep across the word break will be the same, but the behaviour of $/ \mathrm{HH} /$ and $/ \mathrm{LHL} /$ tone patterns on word 2 is left freer, because it is not influenced by the following declarative particle. (This can be seen in some of the cases in (15) where word 2 is in focus, and in the corresponding generalised alternative forms shown in Table 46.) In Table 48 I have regularised the sandhi patterning for the balanced focus phrases:

TABLE 48. TONE SANDHI IN TWO-WORD PHRASES, EQUALLY BALANCED FOCUS;
also showing resulting surface tone patterns

| Pattern | +/HH/[+Foc] | +/LH/[+Foc] | +/HL/[+Foc] | +/LHL/[+Foc] |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & / \mathrm{HH} / \\ & {[+\mathrm{Foc}]} \end{aligned}$ | $\begin{array}{cc} \mathrm{HH} & \mathrm{HH} / \mathrm{HL} \\ {\left[\mathrm{l}^{--}\right.} & \left.--)^{-}\right] \end{array}$ | $\left.\begin{array}{ll} \text { HH } & \text { HL } \\ {[--} & - \end{array}\right]$ | $\begin{array}{ll} \mathrm{HH} & \mathrm{HL} \\ {[--} & - \\ \hline-] \end{array}$ |  |
| $\begin{aligned} & / \mathbf{L H} / \\ & {[+ \text { Foc }]} \end{aligned}$ | $\begin{array}{ll} \text { LH } & \mathrm{HH} / \mathrm{HL} \\ {[--} & --/--] \end{array}$ | $\begin{array}{ll} \text { LH } & \text { HL } \\ {[--} & - \end{array}$ | $\begin{aligned} & \text { LH } \mathrm{HL} \\ & \left.[]_{-}^{-}-{ }_{-}\right] \end{aligned}$ | $\begin{array}{ll} \text { LH } & \text { HHL / LHL } \\ {[-----/--} \end{array}$ |
| $\begin{aligned} & / \mathrm{HL} / \\ & {[+\mathrm{Foc}]} \end{aligned}$ | $\begin{aligned} & \mathrm{HL} \stackrel{\mathrm{l}}{=} \mathrm{HH} / \mathrm{HL} \\ & {[----/--]} \end{aligned}$ | $\begin{aligned} & \mathrm{HL} \stackrel{+}{=} \mathrm{HL} \\ & {[---\quad]} \end{aligned}$ | $\begin{aligned} & \mathrm{HL} \stackrel{\downarrow}{=} \mathrm{HL} \\ & {[---\quad]} \end{aligned}$ | $\begin{aligned} & \mathrm{HL} \stackrel{!}{=} \mathrm{HHL} / \mathrm{LHL} \\ & {\left[---_{-} /{ }_{-}-\right]^{2}} \end{aligned}$ |
| $\begin{aligned} & / \mathbf{L H L} / \\ & {[+ \text { Foc }]} \end{aligned}$ | $\begin{aligned} & \mathrm{LHL} \stackrel{\downarrow}{\mathrm{H} H} / \mathrm{HL} \\ & {[-----/-\ldots} \end{aligned}$ | $\begin{aligned} & \mathrm{LHL} \stackrel{\downarrow}{=} \mathrm{HL} \\ & {[-----]} \end{aligned}$ | $\begin{aligned} & \mathrm{LHL} \stackrel{\downarrow}{=} \mathrm{HL} \\ & {[----\quad]} \end{aligned}$ | LHL ${ }^{〔} \mathrm{HHL} / \mathrm{LHL}$ [-- - --_ / - - ] |

### 12.8 Tone sandhi in two-word noun phrases - rules

I now work through some rules for deriving the patterns seen in the noun phrase tables, and illustrate how they can be applied.

The following rule accounts for the data in the LH row of Table 46:
(17) Non-focused word $1 \mathbf{L H}$-flattening (NF-LH-Flat)

A /LH/ tone on a non-focused first word of a phrase is changed to a flat low LL, no matter which tone follows.

LH [-Foc] $\rightarrow$ LL / __ \# T (where T represents any tone)
(In contrast, a/LH/ on a focused first word remains LH.)
Note that this is not just a manifestation of a pitch range restriction due to the lack of focus; it is a change in tone - otherwise the After-H-Fall rule (see (19)) would apply to the following word.

The operation of the NF-LH-Flat rule is illustrated in (18), where the first word of the phrase, ara $^{\text {LH 'this', has low focus: }}$
(18) UTP
$\mathrm{LH}[-\mathrm{Foc}] \mathrm{LH} \varnothing$ LL $_{\mathrm{LH}, \varnothing}^{\mathrm{LH}} \rightarrow$ $\operatorname{ara}^{\mathrm{LH}} \quad$ meree ${ }^{\mathrm{LH}}-i$ this child-DET 'this child'

NF-LH-Flat

## Assoc/Spread

LL LH

a.ra me.re.e.i
[àrà mè'rèéí]

The following rule accounts for the data in the LH and HH columns of the three tables above:
(19) Word 2 fall after a H tone (After-H-Fall)
a. LH-Fall

A/LH/ tone pattern on word 2 or later keeps its tone pattern after a flattened $/ \mathrm{LH} /(\mathrm{LL})$, but becomes a fall after any other tone.

$$
\mathrm{LH} \rightarrow \mathrm{HL} /(\mathrm{L}) \mathrm{H}(\mathrm{~L}) \# \_
$$

b. $\mathrm{HH}-\mathrm{Fall}$

A/HH/ tone pattern on word 2 optionally becomes a fall.

$$
\mathrm{HH} \rightarrow \mathrm{HL} / \mathrm{T} \# \ldots \text { (common but optional) }
$$

The operation of part (a) of this rule is illustrated in (20), taking the derivation as far as the mapping stage. (See (27) for the completion of the derivation to the surface tone pattern.) (In this and other examples to follow, I have underlined the changed tone, and also any word in focus, if appropriate.)


The Dip Avoidance rule accounts for the raising of L to H in some /LHL/ and /HL/ tone patterns when a combination of tones would otherwise result in dips such as [HLH] or [HLLH] in the surface tone pattern.

## (21) Dip avoidance (*Dip)

This rule deals with dips caused by a/LHL/ tone pattern in a phrase.
a. A/LHL/ tone pattern on word 2 keeps its tone pattern after a flattened /LH/ (LL), but the first L of the pattern is raised to H after any other tone. (This is optional when word 2 is in focus.)

$$
\begin{aligned}
& \text { LHL } \quad \rightarrow \quad \text { HHL / (L)H(L) \# } \\
& \text { (e.g. } \mathrm{H}+\mathrm{LHL} \rightarrow \mathrm{H} \text { HHL) }
\end{aligned}
$$

b. The last L of a/HL/ or $/ \mathrm{LHL} /$ tone pattern on word 1 is raised to H if word 2 has a /LHL/ tone and is in focus.

$$
\begin{aligned}
& \text { (L)HL } \rightarrow \quad(\mathrm{L}) \mathrm{HH} / \ldots \text { \# LHL [ }+\mathrm{Foc} \text { ] } \\
& \text { (e.g. HL + LHL[+Foc] } \rightarrow \text { HH LHL) }
\end{aligned}
$$

There is some variability in the application of this rule, and in cases of $/ \mathrm{LHL} /+/ \mathrm{LHL} /$ either or both of (a) and (b) can take place.

The operation of *Dip (a) when a word 1 tone pattern ends in H is illustrated in (22) (a partial derivation).


The operation of *Dip (b) is illustrated in (23). (See (28) for the completion of the derivation - part of the dip will still remain, in this case.)


The operation of both *Dip (a) and (b) for very nearly the same phrase is shown in (24), resulting in the complete removal of the dip:


The following rule accounts for the focus-dependent upstepping or downstepping of the second word seen in Tables 47 and 46:
(25) Word 2 Focus Upstep/Downstep (Focus-Step)
a. When word 2 of a phrase is in focus and word 1 is not, the $H$ tone value of word 2 is upstepped:

$$
\mathrm{H}[+ \text { focus }] \rightarrow{ }^{\uparrow} \mathrm{H} /[\text {-focus }] \quad \#(\mathrm{~L})
$$

(For example, $/ \mathrm{HH} /[-\mathrm{Foc}]+/ \mathrm{HL} /[+\mathrm{Foc}] \rightarrow \mathrm{HH}{ }^{\uparrow} \mathrm{HL}$ i.e. $\left[\mathrm{HH}{ }^{\wedge} \mathrm{HL}\right]$. NB , this rule has no effect after a LL pattern.)
b. When both words in a phrase are equally in focus, then the $H$ tone value of word 2 is made level with the tone ending word 1.

$$
\begin{gathered}
\mathrm{H}[+ \text { focus }] \rightarrow \stackrel{\downarrow}{ } \text { ل} \mathrm{H} /[+ \text { focus }] \mathrm{H}(\mathrm{~L}) \#(\mathrm{~L})- \\
(\text { For example: } \mathrm{HL}[+ \text { Foc }]+\mathrm{HH}[+ \text { Foc }] \rightarrow \mathrm{HL} \stackrel{\downarrow}{=} \mathrm{HH}, \text { i.e. }[\mathrm{HM} \mathrm{MM}] .)
\end{gathered}
$$

c. When word 1 of a phrase is in focus and word 2 is not, the $H$ tone value of word 2 is downstepped below the level of the tone ending word 1.

$$
\begin{aligned}
& \mathrm{H}[- \text { focus }] \rightarrow{ }^{\downarrow} \mathrm{H} /[+ \text { focus }] \quad \#(\mathrm{~L})- \\
& \left(\text { For example } \mathrm{HL}[+ \text { Foc }]+\mathrm{HH}[-\mathrm{Foc}] \rightarrow \mathrm{HL}{ }^{\downarrow} \mathrm{HH},\right. \text { i.e. [HM LL]). }
\end{aligned}
$$

The ( L ) in word 2 of these formulas shows that the rule still applies, even when *Dip is not applied to a/LHL/ tone for pragmatic reasons.

The operation of Focus-Step (a) is exemplified in (26) with the word in focus underlined. ${ }^{15}$

| (26) | Interpolate | After-H-Fall | Assoc/Spread | Focus-Step |
| :---: | :---: | :---: | :---: | :---: |
|  | H H H ${ }^{\text {O }}$ | H H HL $\varnothing$ | H H H L | $\mathrm{HH}^{\dagger} \mathrm{HH} \mathrm{L}^{\downarrow} \mathrm{L}$ |
|  | dubu geema-i |  | $\cdots \mid$ | \| || |
|  | man big-DET |  | dubu geemai | dubu geema-i |
|  | 'the big man' |  |  | ['dūbū 'géémāi] |

The operation of Focus-Step (c) as it applies to the outputs from examples (20) and (23) is shown in (27) and (28):

| (27) | (after Mapping) |  | Interpolate | Focus-Step |
| :---: | :---: | :---: | :---: | :---: |
|  | LH H H L | $\rightarrow$ | L H $\mathrm{H}^{\downarrow} \mathrm{HL} \quad \rightarrow$ | L H ${ }^{\downarrow}{ }^{\downarrow} \mathrm{HL}$ |
|  | \| | | | |  | \| | | | | \| | | | |
|  | bo.'u me.re.e |  | bo.'u me.re.e | bo.'u me.re.e |
|  | 'whose child' |  |  | [bō'?ú $\beta$ ē,rèè] |
| (28) | (after *Dip) |  | Focus-Step |  |
|  | L HH L HL | $\rightarrow$ | L HH ${ }^{\downarrow} \mathrm{L}$ HL |  |
|  |  |  |  |  |
|  | hi.mi.o a.a.mi.'a.i |  | $\underline{\text { hi.mi.o a.a.mi.'a.i }}$ |  |
|  | 'some days' |  | ['hímíő 'āāmí,1ài ${ }^{16}$ |  |

Another adjustment rule, VV-Level, also applies to some derivations. This rule will be discussed below ( $\S 12.14$ ), but will be presented here first:

[^33]
## (29) Heavy syllable leveling (VV-Level) (also as (55))

A long vowel or diphthong that has a rising contour is leveled if followed by a continuation of the rising pattern; if it has a falling contour it is leveled if followed by a continuation of the falling pattern.

The combined operation of these rules is illustrated in (30)-(32), which show complete derivations of some more of the example phrases given in (14) and (15). There are three phases in the derivations: first the major tone sandhi rules are applied ${ }^{17}$, then the mapping rules; ${ }^{18}$ and finally the minor tone sandhi and adjustment rules, the last of which is intonation (see §12.16). Intermediate results after major tone sandhi and mapping are shown for all words in all phrases as "result so far", where applicable.
(30) Surface tone derivations of (unconnected) phrasal examples that include a word with /LH/ tone. (Words in focus are underlined.)

| Word | Phrase 1 |  | Phrase 2 |  |  | Phrase 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 1 | 2 | 3 | 1 | 2 |
| Phrase <br> Gloss <br> Meaning | $\frac{\underline{O t o}^{\mathrm{H}}}{\text { foot }} \begin{aligned} & \text { 'sanc } \end{aligned}$ | $\begin{aligned} & \operatorname{tama}^{\text {LH }} i^{\varnothing} \ldots \\ & \text { skins-DET } \\ & \text { s. }^{\prime} \end{aligned}$ |  | $\begin{aligned} & \text { hepu }^{\text {LH }} i^{\varnothing} \\ & \text { earth-DET } \\ & \text { of earth' } \end{aligned}$ | $\begin{aligned} & u u b i^{\mathrm{HH}} i^{\varnothing} \ldots \\ & \text { people-DET } \end{aligned}$ | $R a a^{\text {LH }}$ fish 'other | $\begin{aligned} & \frac{{\text { aami' } a^{\text {LHL }}{ }_{i} \varnothing}_{\text {others-DET }}}{\text { fish' }} \end{aligned}$ |
| UTP <br> Major TS <br> NF-LH-Flat <br> After-H-fall |  | $\text { LH } \varnothing$ HL | $\begin{aligned} & \mathrm{LH} \\ & \mathrm{LL} \end{aligned}$ | $\text { LH } \varnothing$ | HH Ø HL | $\begin{aligned} & \mathrm{LH} \\ & \mathrm{LL} \end{aligned}$ | $\text { LHL } \varnothing$ |
| Result so far Mapping Moras | $\begin{aligned} & \mathrm{HH} \\ & \|\mid \\ & \mu \mu \end{aligned}$ | $\begin{array}{l\|l} \hline \text { H L } \\ \mid & \mid \ddots \\ \mu & \mu-\mu \end{array}$ | $\begin{aligned} & \mathrm{LL} \\ & \|l\| \\ & \left\lvert\, \begin{array}{l} \text { \| } \end{array}\right. \\ & \hline \end{aligned}$ | $\begin{aligned} & \mathrm{L} \quad \mathrm{H} \\ & \mid \\ & \mu \\ & \mu \\ & \mu-\mu \end{aligned}$ |  | $\begin{aligned} & \mathrm{L} L \\ & \|\|\mid \\ & \mu \mu \end{aligned}$ |  |
| Result so far <br> Interpolate <br> Minor TS <br> VV-Level <br> Focus-step <br> Declination <br> Level intonation |  | H L L <br> H L ${ }^{\downarrow}$ L <br> ${ }^{\downarrow} \mathrm{H}^{\downarrow}{ }^{\downarrow} \mathrm{L}$ <br> ${ }^{\star}$ H LL | L L ${ }^{\uparrow} \mathrm{LL}$ | L H H | H H L L <br> $\mathrm{H}^{\downarrow} \mathrm{HL}^{\downarrow} \mathrm{L}$ <br> H H L ${ }^{\downarrow}$ L <br> ${ }^{\downarrow}$ H H L L <br> ${ }^{\star}$ H H L L | L L <br> ${ }^{\uparrow}$ LL | LL H LL <br> LL H L ${ }^{\downarrow}$ L <br> ${ }^{\uparrow} \mathrm{LLH} \mathrm{L} \mathrm{L}^{\downarrow} \mathrm{L}$ |

[^34]| Result + Stress | Phrase 1 |  | Phrase 2 |  |  | Phrase 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 'H H | 'M LL | 'MM | M'HH | 'MM L L | 'MM | MMH 'ML |
| Actual STP | [-- | - _-] | [,-- | - '- | - - ] | [1- | '- - - ] |
| Phonetic form | ['ótó | 'tā $\beta$ àì ] | [, ārā | hē'púí | 'ūū bì̀ ] | [.nāā | āā $\beta$ í, Pāì ] |

In (31) there is no line for major tone sandhi before mapping, as the only rule that could apply is the optional After-H-Fall (b) in Phrase 3, which is not applied in this case because of the strong focus on word 2 .
(31) Surface tone derivations of (unconnected) phrasal examples that include a word with /HL/ tone. (Words in focus are underlined.)

| Word | Phrase 1 | Phrase 2 <br> $1 \quad 2$ | Phrase 3 <br> $1 \quad 2$ |
| :---: | :---: | :---: | :---: |
| Phrase <br> Gloss <br> Meaning | Hibaa $^{\mathrm{HL}}$ maamu $^{\mathrm{HL}} i^{\varnothing}$ crocodile mother-DET 'The crocodile mother ...' | $\begin{aligned} & {\text { Reto'a }{ }^{\mathrm{HLL}}}^{\text {two }} \text { gaa'u }{ }^{\text {LHL }} \text {. } \\ & \text { 'Three.' } \end{aligned}$ |  |
| UTP <br> Mapping <br> Moras |  | $\begin{array}{ll} \text { H L } & \text { LHL } \\ i\|\mid & \|\|\mid \\ \mu ~ & \mu \mu \\ \mu \mu \mu \end{array}$ |  |
| Result so far <br> Interpolate <br> Minor TS <br> *Dip <br> VV-Level <br> Focus-step <br> Level intonation |  | H H L LHL <br> $\mathrm{H}^{\perp} \mathrm{H}$ L  <br>   <br>  HHL <br>  ${ }^{\llcorner } \mathrm{HHL}$ | HHL HH $\mathrm{H}^{\downarrow} \mathrm{H}$ L <br> ${ }^{\dagger} \mathrm{H} \mathrm{H}$ |
| Result+Stress <br> Actual STP <br> Phonetic form | $\left[\begin{array}{lll} \text { H MM } & \text { 'MM } & \text { LL } \\ {\left[\begin{array}{lll} {[-} & - & - \\ {[' h i ́ b a ̄ a ̄ ~} & \text { Bāā } & \beta \mathrm{i} i ̀] \end{array}\right]} \end{array}\right.$ | $\begin{array}{ll} \text { 'H } \gg & \text { 'MML } \\ {\left[{ }^{\prime}---\right.} & \left.-\_\right] \\ {[\text {'ne̋tóā }} & \text { gàààū }]^{b} \end{array}$ | $\left[\begin{array}{ll} \text { 'H MM } & \text { 'H H] } \\ {[\text { ' }---} & \text { '- }-] \\ {[\text { 'nétōà }} & \text { 'dúbú }]^{b} \end{array}\right.$ |

${ }^{\text {a }}$ The equal-downstep between two H tones does not change anything!
${ }^{\mathrm{b}}$ The glottal stop is often omitted in the pronunciation of the word reto' $a^{\mathrm{HL}}$ 'two'.
If the VV-Level rule were not applied to Phrase 1 in (31), the final derived result for $\underline{h i b a a}^{\mathrm{HL}} \underline{m a a m u}^{\mathrm{HL}} i^{\varnothing}$ would be an incorrect series of cascades $*[\mathrm{H}>\mathrm{M} \quad \mathrm{M} \gg \mathrm{L}]$, instead of the actual [HMM MM $>\mathrm{L}$ ] (before intonation is applied).

In (32), again, no major tone sandhi applies before mapping. (The strong focus on word 1 of Phrase 1 blocks the application of NF-LH-Flat.)
(32) Surface tone derivations of (unconnected) phrasal examples that include a word with /LHL/ tone. (Words in focus are underlined.)

| Word | Phrase 1 | Phrase 2 |  |
| :---: | :---: | :---: | :---: |
|  | 12 | 12 | 12 |
| Phonemic <br> Gloss <br> Meaning |  | Ata $^{\mathrm{HL}} \quad \underline{\text { himio }}^{\text {LHL }} \ldots$ other day 'Next day $\ldots$ | Kokoro ${ }^{\text {LHL }}$ maamu $^{\mathrm{HL}} i^{\varnothing}$. chicken mother 'The mother chicken' |
| UTP <br> Mapping <br> Moras | LH LHL $\varnothing$ <br> $i\|\mid$ $\|\|\mid \ddots$ <br> $\mu \mu \mu$ $\mu \mu \mu-\mu$ | HL L H L <br> $\|\mid$ $\|\|\mid$ <br> $\mu \mu$ $\mu \mu \mu$ | L H L HL $\varnothing$ <br> $\|\|\mid$ $\quad \\|\| \| ध$ <br> $\mu \mu \mu$ $\mu \mu \mu-\mu$ |
| Result so far <br> Interpolate <br> Minor TS <br> *Dip <br> VV-Level <br> Focus-step <br> Declination <br> Level Intonation |  | $\begin{array}{lc}\text { H L } & \text { L H L } \\ \text { H H } & \text { H H L } \\ & { }^{\top} \mathrm{H} \mathrm{H} \mathrm{L}\end{array}$ |  |
| Result+Stress <br> Actual STP <br> Phonetic form |  | $\left[\begin{array}{ll} \text { 'MM } & \text { 'H H L } \\ {\left[l_{1}^{--}\right.} & 1----] \\ {[1 a ̄ t a ́ ~} & \text { 'hîßííò }] \end{array}\right.$ | $\left[\begin{array}{lll} \text { M'H H } & \text { '^H^H }>\mathrm{L} \\ {[- \text { ' }--} & - & -] \\ {[\text { kò'kōrō }} & \text { 'máá } \beta \overline{\mathrm{u} i \mathrm{i}}] \end{array}\right]$ |

The derived surface forms correspond fairly closely to the actual surface forms for most words. The word ata ${ }^{\mathrm{HL}}$ 'other' in Phrase 2 has a slight pitch rise in the actual surface form, which can be attributed to a strong application of the *Dip rule, that pulls the $/ \mathrm{HL} /$ tone up beyond the normal $[\mathrm{HH}]$ to $\left[\mathrm{H}^{\wedge} \mathrm{H}\right]$, due to the strong focus and high pitch of the following word.

### 12.9 Tone sandhi in verbless negative clauses (+bia)

When bia 'not' follows a noun it forms a phrase (a bia-phrase) that is also a whole negative declarative clause, or the predicate of such a clause, e.g. pito ${ }^{\mathrm{HL}}$ bia 'it is not a cuscus'. The particle bia can occur in isolation and clearly has a falling /HL/ tone pattern, which surfaces as a pitch contour on its 2-mora syllable. Its lexical representation is therefore $b i a^{\mathrm{HL}}$.

The elicited data presented in (33) shows that bia ${ }^{\mathrm{HL}}$ has very little effect on the pitch pattern of the noun preceding it - a sign of focus on the noun.
(33) Representative data for noun tone and stress patterns in bia-phrases (<noun $>+b i a^{\mathrm{HL}}$ 'It is not a ...) for words of various lengths.


The tone patterns for bia-phrases are summarised in Table 49, with some extrapolations for missing data.

TABLE 49. TONE SANDHI FOR NOUN + BIA ${ }^{\text {HL }}$ STATEMENTS, NOUNS OF VARIOUS LENGTHS
ALSO SHOWING SURFACE STRESS AND TONE

|  | 1 two-mora syllable | $\begin{aligned} & 2 \text { one-mora } \\ & \text { syllables } \end{aligned}$ | 3 one-mora syllables | 4 one-mora syllables |
| :---: | :---: | :---: | :---: | :---: |
| HH+bia |  | $\left.\begin{array}{rr} \text { H.H } & \mathrm{HL} \\ {\left[_{1}^{--}\right.} & - \end{array}\right]$ | $\begin{array}{ll} \text { H.H.H } & \text { HL } \\ {[---} & \searrow \end{array}$ | $\begin{array}{cc} \dagger \text { H.H.H.H } & \text { HL } \\ {\left[1_{1}^{---}-\right.} & \searrow \end{array}$ |
| LH+bia | $\left.\begin{array}{cc} \dagger \mathrm{LH} & \mathrm{HL} \\ {[-} & \backslash] \end{array}\right]$ | $\left.\begin{array}{rr} \text { L.H } & \mathrm{HL} \\ \mathrm{H}_{1}- & - \end{array}\right]$ | $\begin{array}{cc} \text { L.L.H } & \text { HL } \\ {\left[-,^{-}\right.} & \searrow \end{array}$ | $\begin{array}{ccc} \text { L.L.L.H } & \text { HL } \\ {\left[\begin{array}{lll} - & - & \end{array}\right]} \end{array}$ |
| HL+bia | $\dagger \mathrm{HL}{ }^{+} \mathrm{HL}$ $[\backslash, ~]$ | $\begin{gathered} \text { H.L }{ }^{\star} \mathrm{HL} \\ { }^{-}-- \end{gathered}$ | H. ${ }^{\downarrow} \mathrm{H} . \mathrm{L}{ }^{1} \mathrm{HL}$ $\left[{ }^{\prime-}--, \ldots\right]$ |  |
| LHL+bia | - | - |  | L.L.H.L ${ }^{\text {THL }}$ $\left[--^{-1-}-, \quad\right]$ |

$\dagger$ Extrapolated from similar data.
Note that bia ${ }^{\text {HL }}$ 'not' retains its underlying /HL/ tone pattern after / $\mathrm{HH} /$ and /LH/ nouns without any downstep - a sign of equal focus. After /HL/ and /LHL/ nouns, however, it appears to be downstepped across the morpheme break to a low fall normally a sign of lowered focus. (An equal focus would entail a leveled downstep, $\stackrel{\downarrow}{\underline{1}}$, across the word break - see (25).) So then, focus in bia-phrases is on the noun, but at the same time - rather contradictorily - there is apparently both a focus on the particle in some cases, and also a lack of focus on the particle in other cases, all in the same syntactic structure, and depending only on the tone of the noun. Since the underlying noun tone pattern should not determine focus in the same context, something different must be going on. As shall be seen in §12.10, a very similar thing happens with the declarative particle $k a^{\text {HL }}$ when it follows 2 -mora nouns. My conclusion is that there is no strange loss in particle focus after/HL/ or /LHL/ nouns; instead the noun and particle together form one compound word sharing the same focus. This is possible if the particle is actually a clitic, and the tone patterns of the noun and particle merge together. This is expressed in the following rule:
(34) Merging of noun+clitic HL sequences (HL-Merge)

A /HL/ tone pattern on a clitic is merged with any /(L)HL/ pattern (or interpolated $\mathrm{H}>\ldots \mathrm{L}$ pattern) on the noun associated with it. ${ }^{19}$
$(\mathrm{L}) \mathrm{HL}_{\mathrm{n}}+\mathrm{HL}_{\mathrm{p}} \rightarrow(\mathrm{L}) \mathrm{H} \gg \mathrm{L}$
$\mathrm{H}>\ldots \mathrm{L}_{\mathrm{n}}+\mathrm{HL}_{\mathrm{p}} \rightarrow \mathrm{H}>\ldots \gg \mathrm{L}$
where subscripts n and p denote patterns belonging to the noun and particle respectively, and $>$ is an intermediate automatically downstepped tone value. ${ }^{20}$

The motivation for HL-Merge appears to be closely related to the dip-avoidance constraint in Kope that occurs between content words in noun phrases, but with the much more closely bound clitics a downstep is always involved. It works very much like the Interpolation rule too, but the former is applied to single HL patterns as part of the Mapping process, whereas HL-Merge applies to sequences of HL patterns. The operation of this rule is illustrated in (35) with a bia-phrase based on the noun gero ' $o^{\text {LHL }}$ 'rat'.


A further observation on stress can be made at this point; in (33) the words kebari ${ }^{\text {LH }}$ and kakapi ${ }^{\mathrm{HH}}$ show stress on their second syllables in bia-phrases, but there is no peak in pitch. This seems strange, at first, in that stress appears to be connected with pitch in the isolation pronunciation of three syllable words (see (6)). The best explanation is that the language also favours a rhythm with beats on alternate moras, giving rise to stress on any syllable containing a mora with a beat. (See § 12.11 for more on this.)

[^35]
### 12.10 Tone sandhi in short verbless declarative clauses (+ka)

The addition of the declarative marker $k a^{\mathrm{HL}}$ to a noun forms a phrase (a $k a$-phrase) that forms the predicate of a declarative clause, e.g. pito ${ }^{\mathrm{HL}} k a^{\mathrm{HL}}$ '(it) is a cuscus'.
(36) Representative data for tone and stress patterns in $k a$-phrases (<noun>+ka 'It is a ...) for nouns (and pronouns) of various lengths.
1 syllable $\quad 2$ syllables $\quad 3$ syllables $\quad 4$ syllables

| HH | [' ${ }^{\prime}$ ' $\backslash$ ] |
| :---: | :---: |
|  | ruu kaa |
|  | 3SG DECL |

$\begin{array}{cc}{[1--\searrow]} \\ \text { uma kaa } & {\left[\text { ' }^{\prime}--_{1-}\right]} \\ \text { kakapi ka }\end{array}$ (no data)
$\mathbf{L H}\left[1^{\prime} \backslash\right]$
duu kaa
sago DEC
$\begin{array}{ll}\text { uma kaa } & \text { kakapi ka } \\ \text { sore DECL } & \text { finger } \quad \text { DECL }\end{array}$
$\left[-{ }^{\prime}>\right] \quad[-1-$
[1-- ${ }^{1-}$ - $\left.{ }^{-}\right]$
uти kaa
kebari ka
berebere ka
dog DECL
'tusk NEG
lightning DECL

## HL ['>, $]$ duo ka

$$
\begin{aligned}
& {\left[{ }^{1-}-1\right]} \\
& \text { pito ka } \\
& \text { cuscus DECL }
\end{aligned}
$$

$$
\begin{aligned}
& {[1---\ldots]} \\
& \text { gii'epu } k a \\
& \text { throat DECL }
\end{aligned}
$$

$$
\left[1--_{1}--_{1}\right]
$$

mihimihi ka
evening tide DECL

LHL
$\left[-^{1-}-,\right]$
[1- - $1>-1-$ ]
gero'o ka badaree'e ka
rat DECL butterfly DECL
The tone patterns for $k a$-phrases are summarised in Table 50 , with an extrapolation for missing data.

TABLE 50. TONE SANDHI FOR NOUN $+K A$ STATEMENTS, NOUNS OF VARIOUS LENGTHS ALSO SHOWING SURFACE STRESS AND TONE

|  | 1 two-mora syllable | 2 one-mora syllables | 3 one-mora syllables | 4 one-mora syllables |
| :---: | :---: | :---: | :---: | :---: |
| /HH/+ka | $\begin{array}{cc}\text { HH } & \mathrm{HL} \\ {\left[\begin{array}{ll}1 & \\ \hline\end{array}\right]}\end{array}$ | $\begin{array}{cc}\text { H. } & \text { HL } \\ {[--} & \searrow\end{array}$ | $\left.\begin{array}{cc} \text { H.H. }{ }^{\downarrow} \mathrm{H} & \mathrm{~L} \\ {\left[{ }^{-1-}-\right.} & , \end{array}\right]$ | $\dagger$ Н.Н.Н. ${ }^{\downarrow} \mathrm{H} \quad$ L $\left[\begin{array}{llll}1- & -1- & -1\end{array}\right]$ |
| /LH/+ka | $\begin{array}{cc} \mathrm{LH} & \mathrm{HL} \\ {[ } & \\ \hline \end{array}$ | $\left.\begin{array}{rr} \text { L.H } & \text { HL } \\ {\left[1_{-}^{-}\right.} & \searrow \end{array}\right]$ | $\left.\begin{array}{cc} \text { L.H. }{ }^{\perp} \mathrm{H} & \mathrm{~L} \\ {\left[-^{-1}-\right.} & 1 \end{array}\right]$ | $\begin{gathered} \text { L.L.H. }{ }^{\downarrow} \mathrm{H} \\ {\left[\begin{array}{cc} 1- & \mathrm{L} \\ {[1-} & - \\ \hline \end{array}\right]} \end{gathered}$ |
| /HL/+ka | $\underset{[ }{\mathrm{H}^{\downarrow} \mathrm{H}} \mathrm{L}$ | $\begin{array}{cc} \mathrm{H}^{ } \mathrm{H} \mathrm{H} & \mathrm{~L} \\ {\left[\begin{array}{lll} 1- & - \end{array}\right]} \end{array}$ | $\begin{gathered} \mathrm{H} .^{+} \mathrm{H} .{ }^{\downarrow} \mathrm{H} \\ {\left[^{--}-\right.} \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{H} \cdot{ }^{\downarrow} \mathrm{H} \cdot{ }^{\downarrow} \mathrm{H} \cdot{ }^{\downarrow} \mathrm{H} \\ {\left[\begin{array}{llll} \mathrm{I}^{-} & - & \mathrm{L} & \\ \hline \end{array}\right]} \end{gathered}$ |
| /LHL/+ka | - | - | L.H. ${ }^{+} \mathrm{H}$ <br> $\left[-^{-1}-\right.$ |  |

$\dagger$ Extrapolated from similar data.
Note that, as with $b i a^{\mathrm{HL}}$, there is always a degree of stress on $k a^{\mathrm{HL}}$. With some of the nouns, the underlying tone patterns are retained, just as they are with bia-phrases. There are two significant differences, however, between $k a$-phrases and bia-phrases (which can best be seen in Figures $15-19$ above); the first is the lowering of the last mora of the three-mora /HH/ and/LHL/ nouns, and the second is the much shorter length of the particle whenever it is downstepped. The explanation suggested earlier was that $k a^{\mathrm{HL}}$ consists underlyingly of a single-mora syllable with a two-value /HL/ tone that is phonologically closely tied to the preceding noun (i.e. a clitic).

In the case of the two-mora $/ \mathrm{HL} /$ nouns ( $d u o^{\mathrm{HL}}$ and pito ${ }^{\mathrm{HL}}$ in the examples above), the noun's $/ \mathrm{HL} /$ pattern and the clitic's $/ \mathrm{HL} /$ pattern are merged into a single long fall, $\mathrm{HL}^{\downarrow} \mathrm{HL}$ (or [ $\left.\mathrm{H} \gg \mathrm{L}\right]$ ), by the HL-Merge rule. Because the clitic is just one mora in length, the result is a four-value tone pattern with just three tone-bearing units (TBUs). This breaks one of the well-formedness conditions for Kope, that requires every tone of a pattern to be uniquely associated with at least one TBU. This can be resolved by introducing a rule to delete the extra tone in the pattern, without affecting the contour of the pattern itself:
(37) Delete extra tone in long fall (Delete-Tone)

The number of tonal elements in a long falling tone sequence $(H>\ldots L)$ is shortened to the number of TBUs (moras) available.

where $>$ is a lower tone value $\left(\mathrm{L}\right.$ or $\left.{ }^{\downarrow} \mathrm{H}\right)$.
The operation of the two relevant rules is illustrated in (38):
(38) Association HL-Merge Delete-Tone


This rule also works for /LHL/ words, as this pattern also includes a HL sequence, for example:
(39) Association HL-Merge Delete-Tone Declination


In the case of the 2 -mora $/ \mathrm{LH} /$ and $\mathrm{HH} /$ nouns (e.g. $u m u^{\mathrm{LH}}$ and $u m a^{\mathrm{HH}}$ in the examples above), adding the particle results in the four-tone sequences $/ \mathrm{LH}+\mathrm{HL} /$ and $/ \mathrm{HH}+$ $\mathrm{HL} /$, which remain unchanged at the surface, as there is no falling tone pattern for the particle's /HL/ to merge into. However, the number of moras available is just three. This can be resolved by lengthening the particle, so that all four tones can be uniquely associated with at least one TBU.
(40) Accommodate extra tone by adding a mora (Add-Mora)

After association of tones to moras, if there is one more tone value than there are moras, then an extra mora is added by lengthening the syllable to the right of the extra tone.

(If the Delete-Tone rule is applicable, it takes priority over the Add-Mora rule, of course.) The operation of the Add-Mora rule is illustrated in (41) and (42):


When there are already at least four moras available, something different happens. Consider the data in the isolation forms and the $k a$-phrase forms of some longer nouns are compared (taking data from (1) and (36)).
(43) Data showing effect of clitic $k a^{\mathrm{HL}}$ on longer nouns
noun

| $/ \mathbf{H H} /$ | /LH/ | /LH/ | /HL/ |
| :--- | :--- | :--- | :--- |
| $[---]$ | $\left[--{ }^{-}\right]$ | $\left[--{ }^{-}\right]$ | $\left[---{ }^{\prime}\right]$ |
| kakapi | kebari | berebere <br> 'finger' | 'tusk' |

noun $+\boldsymbol{k} \boldsymbol{a}^{\mathrm{HL}}{ }^{\prime}$ DECL'

| /HH/ | /LH/ | /LH/ | /HL/ |
| :---: | :---: | :---: | :---: |
| $\left[-^{\prime}-l_{1},\right]$ <br> kakapi ka <br> 'It is a finger.' | $\left[-^{1-}-\right]$ <br> kebari ka <br> 'It is a tusk.' | [1-- ${ }^{1-}{ }_{\text {- }}^{1-}$ ] <br> berebere ka <br> 'It is lightning.' | $\left[{ }^{\prime}-{ }^{-}, \ldots\right]$ <br> gii'epu ka <br> 'It is a throat.' |

Note that $k a^{\mathrm{HL}}$ is always short in duration and low in pitch with longer nouns, but the longer $/ \mathrm{HH} /$ and $/ \mathrm{LH} /$ nouns show an unexpected drop in pitch in their last syllable (mora), resulting in a peak in tone, along with a strong stress, appearing on the
penultimate syllable (underlined in the examples above). This is quite striking when compared with the isolation forms of these words.

My explanation is that when a word in focus has more than enough TBUs to express its own underlying tone pattern, then that tone pattern can be shunted to the left, freeing up the noun's last TBU so that it can be "borrowed" to express the extra tone value of the following particle. The particle's falling contour is once again partly spread onto the noun. This is expressed more precisely in (44) where $T_{n}$ is a native noun tone, and $T_{p}$ is a native particle tone.

## (44) Accommodate extra tone by shifting left (Shift-Left)

If there are more moras than tones in the first morpheme of a word, and fewer moras than tones in the second morpheme of a word, then the tone pattern of the first morpheme is shifted to the left by one mora and remapped, and the first (extra) tone of the second morpheme is then associated with the last (now freed up) mora of the first morpheme.

| $\mathrm{T}_{\mathrm{n}} \mathrm{T}_{\mathrm{n}}$ | $\mathrm{T}_{\mathrm{p}} \mathrm{T}_{\mathrm{p}}$ | $\rightarrow$ | $\mathrm{T}_{\mathrm{n}} \mathrm{T}_{\mathrm{n}}$ | $\mathrm{T}_{\mathrm{p}} \mathrm{T}_{\mathrm{p}}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\|\mid$ | $\mid$ |  | $/ \neq / \neq /$ | $\mid$ |
| $\mu_{\mathrm{n}} \mu_{\mathrm{n}} \mu_{\mathrm{n}}$ | $\mu_{\mathrm{p}}$ |  | $\mu_{\mathrm{n}} \mu_{\mathrm{n}} \mu_{\mathrm{n}}$ | $\mu_{\mathrm{p}}$ |

The operation of this rule is illustrated in (45):
(45) After Assoc
$\mathrm{H}_{\mathrm{ka}}$ is left floating;
a. $\mathrm{L}_{\mathrm{n}} \mathrm{H}_{\mathrm{n}} \quad \mathrm{H}_{\mathrm{p}} \mathrm{L}_{\mathrm{p}} \quad \rightarrow \quad \mathrm{L}_{\mathrm{n}} \mathrm{H}_{\mathrm{n}} \quad \mathrm{H}_{\mathrm{p}} \mathrm{L}_{\mathrm{p}}$
$k e . b a . r i^{\mathrm{LH}} \quad k a^{\mathrm{HL}}$
'It is a tusk.'

'It is a finger.'

'It is lightning.'
$1 \neq / \neq$
ke.ba.ri ka
Noun tones shift left Floating tone is associleaving a free TBU; ated with free TBU. $\rightarrow \mathrm{L}_{\mathrm{n}} \mathrm{H}_{\mathrm{n}} \quad \mathrm{H}_{\mathrm{p}} \mathrm{L}_{\mathrm{p}}$ | \| / | ke.ba.ri ka

The sequence $H_{n} H_{p}$ is not yet the correct surface tone, however. A further constraint forbids the occurrence of two high tones from two morphemes occurring adjacent to each other on the same morpheme (a variety of the Obligatory Contour Principle). The strategy is that the H tone that belongs to the particle is lowered, so that both H tones are preserved separately in principle.
(46) Obligatory Contour Principle with contiguous $\mathbf{H}$ tones from different morphemes ( $\mathrm{OCP}-$ - $\mathrm{H}-\mathrm{H}$ )

Two contiguous H tones from different morphemes are not allowed on the same morpheme. To avoid this, the non-native H tone is down-stepped.

This response to the OCP constraint in the continuing derivations of the forms in (45) is demonstrated in (47), starting with both H tones contiguous on the same morpheme after the re-mapping operation, Shift-Left:


Note that this sandhi process neutralises the difference between/LH/ and /LHL/ tone patterns in this frame (compare (47)a and (39)).

Longer / $\mathrm{HL} /$ nouns, on the other hand, behave much the same as the 2-mora / $\mathrm{HL} /$ nouns in this frame - the $/ \mathrm{HL} /$ pattern of the clitic is incorporated into the overall falling pitch contour of the word/phrase. For example:


### 12.10.1 Tone sandhi of $k a$-phrases with $i$-suffixed nouns

In the previous section I showed that when the particle $k a^{\mathrm{HL}}$ is the second word of a phrase, if the first word is a non-/ $\mathrm{HL} /$ noun of two moras then the particle is lengthened (to [káà]); but if the first word has three or more moras, then the particle is able to float its H back over onto the noun, and the particle ends up with just the Lend of the tone pattern (i.e. [kà], or just [kà]). In this section I examine what happens when the number of moras of the noun is increased by suffixation by the article $-i^{0}$ 'DET'.

Because the article $-i^{\varnothing}$ takes on the tone of the word to which it is attached (as shown in §12.6), and also increases the number of moras of that word to three or more, we might reasonably expect that a following $k a^{\mathrm{HL}}$ will end up with a surface L tone. However an examination of the data in (49) demonstrates that, in fact, this does not happen with $/ \mathrm{HH} /$ and $/ \mathrm{LH} /$ nouns.
(49) Data showing effect of article $-i$ on pitch and stress of nouns

$$
\text { noun }+\boldsymbol{k} \boldsymbol{a}^{\mathrm{HL}} \text { ' }^{\text {DECL }} \text { ' }
$$

| /HH/ | /LH/ | /LH/ | /HL/ |
| :---: | :---: | :---: | :---: |
| $['--\quad \text { ' }$ <br> uma kaa <br> 'It is a sore.' | $\left\lvert\, \begin{aligned} & \mathrm{L}_{1}--\quad \vee{ }_{1} \\ & \text { umu kaa } \\ & \text { 'It is a dog.' } \end{aligned}\right.$ | $\begin{aligned} & {\left[l^{[--,},\right]} \\ & \text {pito ka } \\ & \text { 'It is a cuscus.' } \end{aligned}$ | [-'--,_] <br> gero'o ka <br> 'It is a rat.' |

$$
\text { noun }-i{ }^{\prime} \mathrm{DET}^{\prime}+\boldsymbol{k} a^{\mathrm{HL}}{ }^{\prime} \mathrm{DECL}^{\prime}
$$

| /HH/ | /LH/ | /LH/ | /HL/ |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & {\left[\dagger^{\prime}(--)\right. \text { in }} \\ & \text { umai kaa } \\ & \text { 'It is the sore.' } \end{aligned}$ | $\begin{aligned} & {\left[\begin{array}{l} \text { - }-, ~+] ~ \\ \text { umui kaa } \\ \text { 'It is the dog.' } \end{array}\right.} \end{aligned}$ | $\begin{aligned} & {['--\quad]} \\ & \text { pitoi ka } \\ & \text { 'It is the cuscus.' } \end{aligned}$ | $\begin{aligned} & {[1--\mathrm{-}]} \\ & \text { gero'oi ka } \\ & \text { 'It is the rat.' } \end{aligned}$ |

$\dagger$ The parentheses here indicate that the stress applies evenly to the whole word.

After a $/ \mathrm{LH} /$ or $/ \mathrm{HH} /$ noun with an article, the clitic behaves much the same as with a noun without an article, in spite of the extra mora the article supplies to the noun. The explanation is that, when the zero-toned article takes on the tone of its noun, it takes it on as if it owns it; it is not free to shift it back to the left again onto the noun root. This blocks the clitic from floating its extra tone onto the article suffix; instead it is obliged to add an extra mora in order to express its contour.

With /HL/ and /LHL/ nouns, on the other hand, the addition of $-i$ still results in an overall falling pattern on the word, and the Merge-HL rule still works.

There is still one anomaly - when one compares ити kaa with uтиi kaa in (49), addition of the article shifts the stress from the first to the second syllable of the noun; but when one compares uma kaa with umai kaa, the stress on the noun becomes ambiguous - the syllables seem to be evenly stressed (shown by the use of parentheses). This will be discussed in the next section.

### 12.11 Notes on stress

It is clear that stress (see footnote 7 above in $\S 12.4$ ) and tone interact in Kope, but a careful study of this interaction is beyond the scope of this paper. Instead a rough guide will have to suffice. I have not been able to compile a list of rules that works, so, in the manner of Optimality Theory, I have instead compiled a list of factors or constraints that seem to be important when trying to account for stress assignment in phrases, and which I have provisionally ranked in order of priority in case there are conflicts:
i. A short syllable cannot be stressed before another stressed syllable, e.g. for gero ' ${ }^{\text {LHL }}$ 'rat', the surface form [gē'rórō] is correct, not *['gē'rórō]. (This is perhaps another application of the OCP.)
ii. An initial syllable that is high in tone attracts stress, e.g. for pito ${ }^{\mathrm{HL}}-i$ 'the cuscus' ['pítōi] is correct, not *[pítō̄̄].
iii. There is a preference for a rhythm with a beat on alternate moras, where stress falls on syllables containing a beat, e.g. for kakapi $^{\text {HH }}$ bia $^{\text {HL }}$ 'not a finger' [ká'kápí 'bíà] is correct, not *['kákápí 'bíà]. A subsequence of this is that a 2-mora syllable will often attract stress, as one of their moras is certain to have a beat. For example, for gero' $i^{\text {iHL }} k a^{\mathrm{HL}}$ 'it is the rat', the surface form ['gēró' $\mathrm{Cō} \bar{i}$, kà] is correct, not *[gē'ró?ōī 'kà].
iv. Stress is attracted to a high surface tone, rather than a low tone, e.g. for gero' $o^{\text {LHL }}$ 'rat', the surface form [gē'ró? $\left.\bar{o}\right]$ is correct, not *['gēról $\overline{0}$ ]; for $k e b a r i^{\text {LH }} r a^{\text {LL }}$ 'is it a tusk?', the correct surface form is [kē'bárī rà], not *['kēbá'rī rà ].

In general, also, a stress is stronger on syllables close to the peak in pitch of a phrase, and weaker on syllables further away, e.g. for gero'oi ${ }^{\text {LHL }} k a^{\mathrm{HL}}$ 'it is the rat'


As an example of the application of these constraints, consider the difference between $u m u^{\text {LH }} k a a^{\mathrm{HL}}$ [, ùßú 'káà] 'it is a dog' and $u m u i^{\text {LH }} k a a^{\mathrm{HL}}$ [ù' $\beta u ́ i ́{ }_{1}$,kāà] 'it is the dog' shown in (49) above. For the first phrase the syllable and surface pitch pattern is [L.H HL]. The first constraint in the list that applies is number 3. There are two complying stress patterns possible; one involves beats on moras 1 and 3 (? ['u.mu 'kaa] with beats underlined), and the other involves beats on moras 2 and 4 (?[u.'mu 'kaa]). The 2-and-4 beat option would result in a stress on two adjacent syllables, the first of which ([mu]) is short. But this conflicts with constraint number 1! The 1-and3 beat option only partly conflicts with constraint 4 by having the first stress on a low surface tone. Therefore this option "wins".

When the article is added the syllable and surface pitch pattern is [L.HH HL], and, again, the first constraint that applies is number 3, allowing two possibilities: beats on moras 1,3 and 5 (?['u.'muí 'kaa]), and beats on moras 2 and 4 (?[u.'mui 'kaa]). The 1-3-5 option would again result in a stress on two adjacent syllables, the first of which ([u]) is short, conflicting with constraint number 1. The 2-4 option does not conflict with any constraint, and therefore "wins".

With $u m a^{\mathrm{HH}} k a a^{\mathrm{HL}}$ ['úßá 'káà] 'it is a sore' stress assignment works in the same way as for $u m u^{\mathrm{LH}} k a a^{\mathrm{HL}}$, but for $u m a i^{\mathrm{HH}} k a a^{\mathrm{HL}}$ ['(úßáí) ,kāà] 'it is the sore' all of the constraints in the list apply, and the resulting conflicts seem to be resolved by distributing the stress evenly over both syllables of the noun, much as is heard in the isolation pronunciation of $/ \mathrm{HH} /$ words, and also in the phrase $u m u u^{\mathrm{HH}} k a a^{\mathrm{HL}}$ 'it is a riverside pandanus', which also has the same syllable structure and tone patterning (see (56)).

### 12.12 Tone sandhi in longer verbless declarative clauses

In two-noun $k a$-phrases, exemplified in the two-noun possessive declarative clauses of (16) above, it is important to note that $k a^{\mathrm{HL}}$ is always short and low-toned, whereas when certain of these same nouns appear in single-noun declarative clauses, the $k a^{\text {HL }}$ will be lengthened and show a high falling tone (see § 12.10.1). This shows that the noun $+k a^{\mathrm{HL}}$ tone mapping must take place after the major tone sandhi changes to the noun tones. Below is a set of typical derivations from (16). A third "result so far" line is included in these derivations immediately before the application of the minor tone sandhi rules.
(50) Derivations of some possessor-possessee declarative clauses (beginning with LH and LHL words).

(51) Derivations of some possessor-possessee declarative clauses (beginning with HL and HH words).

| Word | Clause 1 <br> 1 |  | 3 | Clause 2 <br> 1 | $2$ | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Phonemic <br> Gloss <br> English | Pito ${ }^{\mathrm{HL}} i^{\varnothing}$ <br> cuscus-DET <br> 'It is cuscus' | $u m a^{\mathrm{HH}} i^{\varnothing}$ <br> sore-DET <br> 's sore.' | $\begin{aligned} & k a^{\mathrm{HL}} . \\ & \mathrm{DECL} \end{aligned}$ | $\begin{aligned} & O o b o^{\mathrm{HH}} i^{\varnothing} \\ & \text { woman-DET } \\ & \text { 'It is the wor } \end{aligned}$ | moto ${ }^{\mathrm{HL}} i^{\varnothing}$ house-DET man's house | $k a^{\mathrm{HL}} .$ <br> DECL |
| $\begin{aligned} & \hline \text { UTP } \\ & \text { Major TS } \\ & \text { After-H-fall } \end{aligned}$ | $\text { HL } \varnothing$ | $\text { HH } \varnothing$ <br> HL | HL | HH $\varnothing$ | HL $\varnothing$ | HL |
| Result so far <br> Mapping <br> Moras <br> Interpolation | H L <br> \| | 气 <br> $\mu \mu-\mu$ <br> $H^{\perp}{ }^{\downarrow} \mathrm{L}$ | $\begin{aligned} & \text { H L } \\ & \|\mid ध \\ & \mu \mu-\mu \\ & \text { H L }{ }^{+} \mathrm{L} \end{aligned}$ | $\begin{gathered} \hline \mathrm{HL} \\ \mid \\ \mu \end{gathered}$ | $\begin{gathered} \text { H H } \\ \forall\\|\\| \\ \mu \mu \mu-\mu \end{gathered}$ |  | $\begin{gathered} \mathrm{HL} \\ \mid \\ \mu \end{gathered}$ |
| Result so far HL-Merge Delete-Tone | $\mathrm{H}>\mathrm{L}$ | $\begin{aligned} & \mathrm{H}>\mathrm{L} \\ & \mathrm{H} \gg \end{aligned}$ | $\begin{gathered} \mathrm{HL} \\ >\mathrm{L} \\ \mathrm{~L} \end{gathered}$ | HH H H | $\begin{aligned} & \mathrm{H}>\mathrm{L} \\ & \mathrm{H} \gg \\ & \mathrm{H} \gg \end{aligned}$ | $\begin{gathered} \mathrm{HL} \\ >\mathrm{L} \\ \mathrm{~L} \end{gathered}$ |
| Result so far: <br> Minor TS <br> Focus-Step <br> VV-Level | $\mathrm{H}>\mathrm{L}$ <br> H MM | $\begin{aligned} & \mathrm{H} \gg \\ & \stackrel{\downarrow}{4} \mathrm{H} \gg \\ & == \\ & ={ }_{=}^{\mathrm{l}} \mathrm{H} \mathrm{MM} \end{aligned}$ | L | HH HH | $\mathrm{H} \gg$ <br> $\stackrel{\stackrel{4}{6}}{\square}$ <br> H MM | L |
| Result+Stress <br> Actual STP <br> Phonetic form | $\begin{aligned} & \text { 'H MM } \\ & \text { ['- - } \\ & \text { ['pí tóí } \end{aligned}$ | ' ${ }^{\dagger}{ }^{\prime} \mathrm{MM}$ <br> ' - $\qquad$ <br> 'ú ßāì | , L <br> ,-] <br> ,kä] | $\begin{aligned} & \text { 'HH'HH } \\ & \text { ['—— } \\ & \text { ['óó bóí } \end{aligned}$ | $\begin{aligned} & \text { 'H MM } \\ & \text { ' - - } \\ & \text { 'mó tōī } \end{aligned}$ | , L , _ ] <br> ,kà] |

The noun + noun possessive clause tone patterning is much the same when the possessor noun is replaced by a pronoun, with a LH-toned possessor pronoun retaining its underlying tone, and the possessee noun again showing a falling surface pattern.
(52) Tone sandhi in nouns following two different possessive pronouns, one with a $/ \mathrm{HH} /$ pattern, and one with a $/ \mathrm{LH} /$ pattern

$$
\begin{array}{cccc}
+/ \mathbf{H H} / & +/ \mathbf{L H} / & +/ \mathbf{L H L} / & +/ \mathbf{H L} / \\
+ \text { uma } & + \text { umu } & + \text { oomo } & + \text { ome } \\
\text { 'sore' } & \text { 'dog' } & \text { 'adze' } & \text { 'shark' }
\end{array}
$$

```
nuи \(^{\mathrm{HH}}\) 'his/her' + <noun>
```

$$
\begin{aligned}
& \text { ruи umai ka ruи umui ka ruи oomoi ka ruи omei ka }
\end{aligned}
$$

$\boldsymbol{m o o}^{\text {LH }}$ 'my' + <noun>

$$
\begin{aligned}
& {\left[1^{1}-1,\right] \quad[1-1-1,]}
\end{aligned}
$$

$$
\begin{aligned}
& \text { moo umai ka moo umui ka moo oomoi ka moo omei ka }
\end{aligned}
$$

### 12.13 Tone sandhi in verbless interrogative clauses

 (+ra)The addition of the interrogative clitic ra to a noun forms a phrase (a ra-phrase) that is also a whole question, or the predicate of such a question, e.g. pito ${ }^{\mathrm{HL}} r a$ 'is it a cuscus?' Consider the data in (53).
(53) Representative examples for tone patterns in ra-phrases (<noun>+ ra 'Is it a ...?') for nouns of various lengths

|  | [ ${ }^{--}$- $]$ | [-1-_ _ ] | (no data) |
| :---: | :---: | :---: | :---: |
|  | gara ra | kakapi ra |  |
| 3SG INT | fence INT | finger INT |  |
| $\mathbf{L H}[1 /$ ] | $[-1-\backslash]$ | [ ${ }^{1-}$ - - ] | [--'-- _ ] |
| goe ra | ити ra | kebari ra | berebere ra |
| betelnut INT | dog INT | tusk INT | lightning INT |
| $\mathbf{H L}\left[{ }^{\prime} \times\right.$ ] | $\left[{ }^{1-}{ }_{-}\right]$ | [1---_] | $\left[{ }^{---_{1}--_{-}}\right]$ |
| duo ra | pito ra | dodoro ra | mihimihi ra |
| night INT | cuscus INT | bank INT | evening tide INT |
| LHL |  | [-'- - _ ] | [--1-__] |
|  |  | gero'o ra | badaree'e ra |
|  |  | rat INT | butterfly INT |

The tone patterns for ra-phrases are summarised in Table 51.

TABLE 51. TONE SANDHI PATTERNS FOR NOUN $+R A$ QUESTIONS, NOUNS OF VARIOUS LENGTHS, ALSO SHOWING SURFACE STRESS AND TONE

|  | 1 two-mora syllable | 2 one-mora syllables | 3 one-mora syllables | 4 one-mora syllables |
| :---: | :---: | :---: | :---: | :---: |
| /HH/+ra | $\begin{array}{rrr}\text { HH } & \mathrm{L}^{\downarrow} \mathrm{L} \\ {\left[\begin{array}{ll}\square & \\ \hline\end{array}\right.} & \end{array}$ | $\begin{array}{cc} \text { H.H } & L^{\mathrm{L}} \mathrm{~L} \\ {\left[\begin{array}{ll} --- & \end{array}\right]} \end{array}$ | $\begin{aligned} & \text { H.H.L }{ }^{\downarrow} \mathrm{L} \\ & {\left[^{-1-}-\quad\right]} \end{aligned}$ | $\begin{array}{ll} \dagger \text { H.H.H.L } & { }^{\downarrow} \mathrm{L} \\ {\left[{ }^{1-}-1-\right.} & - \end{array}$ |
| /LH/+ra | LH <br> L <br>  |  | $\begin{array}{cc} \text { L.H.L } & { }^{\perp} \mathrm{L} \\ {\left[-{ }^{-1}-\right.} & -] \end{array}$ | $\left.\right]$ |
| /HL/+ra | $\mathrm{H}^{\dagger} \mathrm{H}$ L $[\backslash]$ | $\left.\begin{array}{cc} \mathrm{H}^{.} \mathrm{H} & \mathrm{~L} \\ {\left[^{1-}-\right.} & ] \end{array}\right]$ | $\begin{gathered} \mathrm{H} \cdot{ }^{\downarrow} \mathrm{H} \cdot{ }^{\downarrow} \mathrm{H} \\ {\left[\begin{array}{ll} 1- & \mathrm{L} \\ { }^{-} & - \\ \hline \end{array}\right]} \end{gathered}$ | H. ${ }^{\downarrow} \mathrm{H} .{ }^{\downarrow} \mathrm{H} .{ }^{\downarrow} \mathrm{H} \mathrm{L}$ $\left[\begin{array}{llll} 1- & - & - & - \end{array}\right]$ |
| /LHL/+ra |  |  | $\begin{array}{cc}\text { L.H. }{ }^{\downarrow} \mathrm{H} & \mathrm{L} \\ {\left[-^{1-}-\right.} & -]\end{array}$ |  |

$\dagger$ Extrapolated from similar data.
As has been shown in §12.5.2, ra, like $k a$, has a falling contour after /LH/ and $/ \mathrm{HH} /$ 2-mora nouns. However, the contour starts much lower and has a shorter fall than heard with $k a$, and the vowel of $r a$ is lengthened only half as much as that of $k a$. In spite of this, there is one strong piece of evidence that $r a$, like $k a$, may still have an underlying 2 -value tone pattern - the leftward shift of the noun's tone pattern that occurs on longer $/ \mathrm{LH} /$ and $/ \mathrm{HH} /$ nouns, to make way for one of $r a$ 's two tone values, just as happens with the $/ \mathrm{HL} /$ pattern of $k a$.

The clitic $r a$ is probably never pronounced in isolation - one attempt to elicit it in isolation resulted in a word with a rising tone. This is actually homophonous with $r a a^{\text {LH }}$ 'thing', so there is some doubt as to whether we actually elicited the particle/clitic. Nevertheless, as it certainly does behave like a two-value tone pattern, that pattern would have to be one of $/ \mathrm{HH} /$, /HL/, /LH/, or /LL/. /HH/ is most unlikely as the particle is consistently pitched low. /HL/ has to be rejected, as $r a$ behaves differently from $k a^{\mathrm{HL}}$.

It is reasonable, however, to consider $/ \mathrm{LH} /$, since it is a pattern also found in the nouns, and which inverts to HL in word 2 . The steep low drop could then be explained as a downstep attributable to a focus on the noun alone, by the Focus-Step rule (25). I have rejected this analysis, however, for three reasons: (1) I have shown that the other clitics bia and $k a$ are incorporated phonologically into the noun and
actually share the focus of the noun, in spite of apparent downsteps to the surface tones of those clitics with certain underlying noun tone patterns; (2) $r a$ is consistently much shorter than the two-mora bia, or the two-mora version of $k a$; and (3) the "downstep" between noun and particle is consistently steep throughout the noun $+r a$ paradigm. The only alternative two-value pattern, then, is /LL/ - a pattern not found in the nouns (except after major tone sandhi). If we accept this conclusion, the lexical representation of the clitic will be $r a^{\mathrm{LL}}$.

Assuming a $/ \mathrm{LL} /$ pattern for $r a$, I show some derivations of $r a$-phrases below. The derivations of $r a$-phrases are quite short, and can be carried out without need of any additional rules. The two-value tone pattern does result in too few TBUs, and is certainly floated back onto the noun if there is "space available". When there is no such space available, the Add-Mora rule applies, but since there is no contour, there does not seem to be much need to lengthen the particle; and maybe that is why $r a$ is only $50 \%$ longer than a short vowel following short $/ \mathrm{HH} /$ and /LH/ words (see §12.5.2).
(54) Derivations of some $r a$-phrases

| Word | Phrase 1 <br> $1 \quad 2$ | Phrase 2 <br> 1 2 | Phrase 3 <br> 1 2 |
| :---: | :---: | :---: | :---: |
|  | Gara $^{\mathrm{HH}} r a^{\mathrm{LL}}$. <br> fence INT 'Is it a fence?' | $U m u^{\mathrm{LH}}$ $r a^{\mathrm{LL}}$ <br> dog INT <br> 'Is it a dog?  | Kebari $i^{\text {LH }}$ ra tusk 'Is it a tusk?. |
| UTP <br> Mapping <br> Moras | $\begin{array}{\|ccc} \hline \text { H } & \text { H } & \text { LL } \\ \mid & \mid & \mid \\ \mu & \mu & \mu \\ \hline \end{array}$ | $$ |  |
| Result so far <br> Remapping <br> Shift-Left/Add-Mora <br> Moras | H H L L <br>  L L <br>  $\|\mid$ <br>   <br>  $\mu \mu$ | L H L L <br>  L L <br>  $\|\mid$ <br>  $\mu \mu$ | $$ |
| Result so far Declination | H H L L | $\begin{array}{lll} \hline \text { L H } & \text { L L } \\ { }^{\text {t L H }} & \\ \hline \end{array}$ | $\begin{array}{\|cc\|} \hline \text { L H L } & \text { L } \\ { }^{\text {}} \text { L H L } & { }^{〔} \text { L } \\ \hline \end{array}$ |
| Result+Stress <br> Actual STP <br> Phonetic form | $\left[\begin{array}{ll} \text { H H } & \text { LL } \\ {\left[{ }^{1}--\right.} & -] \\ {[\text { 'gárá }} & \text { rà' }] \end{array}\right.$ | $\left[\begin{array}{ll} \mathrm{M}^{\prime} \mathrm{H} & \mathrm{LL} \\ {[-1-} & -] \\ {\left[\mathrm{u}^{\prime} \beta\right. \text { ú }} & \text { rà }] \end{array}\right.$ | $\left[\begin{array}{ll} \mathrm{M} \text { 'HM } & \mathrm{L} \\ {\left[-{ }^{-1-}\right.} & - \\ {[\text { kè'bárī }} & \text { rà' }] \end{array}\right.$ |

Note that, on the surface, unlike $k a^{\mathrm{HL}}$, the clitic $r a^{\mathrm{LL}}$ never seems to receive a stress, not even a secondary one. This is probably because it does not include a H tone in its underlying pattern.

The tonal behaviour of $r a^{\mathrm{LL}}$ is not unique in the language - the agentive particle/suffix $r o^{\text {LL }}$ also behaves similarly, e.g. $m o o^{\mathrm{LH}} r o^{\mathrm{LL}}$ ['mó: rò'] ' 1 SG AG'; and there may be other such morphemes that have not yet been investigated.

### 12.14 Tone leveling in heavy syllables

Pitch contours can be heard on some long vowels when words are spoken in isolation, e.g. meree $^{\text {LH }}$ 'child' has a rising contour on the last syllable, i.e. [mē'rḗ']; but when such a word is part of a phrase, the contour may be reduced to a mid-high or high level, e.g. [mè,rē: 'bíà] 'not a child'. Consider the data in Table 52, where long vowels are compared with sequences of short vowels with the same underlying tone patterns. I have underlined the tones where expected contours have been leveled on long vowels:

TABLE 52. SURFACE TONE PATTERNS AND STRESS FOR THREE-MORA NOUNS IN THREE FRAMES, COMPARING NOUNS WITH THREE SINGLE-MORA SYLLABLES WITH NOUNS WITH A LONG VOWEL

IN EITHER FIRST OR SECOND SYLLABLE

| UTP | Example | Gloss | isolation | + $\boldsymbol{k}^{\text {HL }}$ 'DECL' | $+\boldsymbol{b i a}{ }^{\mathrm{HL}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| /HH/ |  |  | [ka.ka.pı | [kā.'ká.pī ,kà] | [ká.,ká.pí 'bíà] <br> ['óóbó 'bíà] <br> [úßßúú 'bíà] |
|  | oo | 'woman | [óób | 'óóbō , kà] |  |
|  | uтии $^{\text {HН }}$ | 'pandanus' | [úßúú] |  |  |


| UTP | Example | Gloss | isolation | $+\boldsymbol{k a}{ }^{\text {HL }}$ 'DECL' | $+\boldsymbol{b i a}{ }^{\mathrm{HL}}{ }^{\text {NEG }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| /LH/ | kebari $^{\text {LH }}$ | 'fruit bat' | [kēb | [kē'bárì ,kà] <br> ['bāágī , kà] <br> [mē'réé , kà] | [kè, bàrī 'bíà] <br> [,bààgī 'bíà] <br> [mèr, cēē 'bíà] |
|  | baagi $^{\text {LH }}$ | 'fruit bat' | [bāāgí] |  |  |
|  | meree ${ }^{\text {LH }}$ | 'child' | [mē'rēé |  |  |
| /HL/ | dod |  | ['d | $\begin{array}{r} {[\text { ['dődórō ,kà] }} \\ {[\text { ['góó } \beta \bar{o}, k a ̀]} \\ {[\text { 'hóóhōō ,kà] }} \end{array}$ | ['dődórō ,bià] <br> ['góóßō ,bià $]$ ] <br> ['hóóhōō ,bià] |
|  | goomo ${ }^{\text {H }}$ | 'chest' | góó |  |  |
|  | hoohoo ${ }^{\mathrm{HL}}$ | 'face' | [hóóhōò] |  |  |
| /LHL/ | gero 'o ${ }^{\text {LHL }}$ |  | [gē'r | $\begin{array}{r} {[\text { [gē'rórō , kà] }} \\ {\left[\begin{array}{ll} \text { ['ṓßō } & \text { kà] }] \\ {[\text { tē'téē , kà }]} \end{array}\right]} \end{array}$ | [gē'rórō ,bì̀ ] <br> ['ōóßō ,bì̀] <br> [tē'téē ,bià $]$ |
|  | oomo ${ }^{\text {LH }}$ | 'adze | ['ōóß |  |  |
|  |  | 'stranger' | [tètéè] |  |  |

$\dagger$ The parentheses indicate the stress applies to the whole word evenly.
The items of interest to this discussion have been extracted, and in Table 53 they have been rearranged according to whether the heavy syllable tones have been leveled or not.

Table 53. Contour pattern retention/LEVELING ON LONG Vowels - REPRESENTATIVE EXAMPLES AND CONTEXTS

| Contour | Retained | Leveled |
| :---: | :---: | :---: |
| Rising | $\begin{aligned} & \text { [mē'rēéé]/L._\#) } \\ & \text { ['bāáāī ,kà] /\#__.'HL } \\ & \text { ['ōóßò }] \text { \#__.L } \end{aligned}$ | $\begin{aligned} & {[\text { [mē'réé , kà }] / \mathrm{L} . \ldots \mathrm{HL}} \\ & \text { [mèrēé 'bíà] /L.__ HL } \end{aligned}$ |
| Falling | [hóóhò ]/H._\# <br> [tē'téè /L._-\# <br> [tē'téé ,kà]/L._L L) <br> [tê'téé , bià $/ \mathrm{L} . \ldots{ }^{\mathrm{L}} \mathrm{HL}$ ) <br> [mē'rée , kà] (L._ L) | $\begin{aligned} & \text { ['(úßúú) , kà] /H__ L } \\ & \text { ['góóßò] /\#__.L } \\ & \text { ['góóßō ,kà] /\#_.L } \\ & \text { ['góóßō ,bìà] /\#_.L } \\ & \text { ['hóóhōò }] \text { /\#__ 'HL } \\ & \text { ['hóóhōō ,kà] /H.__ L } \\ & \text { ['hóóhōō ,bìà]/H.__ 'HL } \end{aligned}$ |

The rule covering these changes, given earlier in (29), is presented again here:
(55) Heavy syllable leveling (VV-Level)

A long vowel or diphthong that has a rising contour is leveled if followed by a continuation of the rising pattern; if it has a falling contour it is leveled if followed by a continuation of the falling pattern.

$$
\begin{array}{ll}
\text { LH [+heavy] } & \rightarrow \mathrm{MM} \mathrm{/} \quad \mathrm{H} \text { or }{ }^{\wedge} \mathrm{H} \text { or }{ }^{\uparrow} \mathrm{H} \\
\mathrm{H}^{\downarrow} \mathrm{H}[+ \text { heavy }] & \rightarrow \mathrm{HH} /{ }^{\downarrow} \mathrm{H} \text { or } \mathrm{L} \\
\gg[+ \text { heavy }] & \rightarrow \mathrm{MM} \mathrm{/} \mathrm{H(>)} \quad(>) \mathrm{L}
\end{array}
$$

etc.

Derivations of some of the examples in Table 53 are shown below:
(56) Derivations of some phrases with long vowels. (Syllable breaks are marked with a dot.)

| Word | Phrase 1 1 | Phrase 2 1 | 2 | Phrase 3 <br> $1 \quad 2$ |
| :---: | :---: | :---: | :---: | :---: |
| Phonemic <br> Gloss <br> Meaning | Goomo ${ }^{\mathrm{HL}}$. <br> chest <br> 'a chest' | Meree ${ }^{\text {LH }}$ <br> person 'not a per | $\begin{aligned} & \quad b i a^{\mathrm{HL}} . \\ & \text { not } \end{aligned}$ | Umuu ${ }^{\mathrm{HH}} \quad k a^{H L}$. <br> mangrove DECL 'it is a mangrove' |
| UTP <br> Mapping <br> Moras | $\begin{array}{r} \text { H L } \\ \boldsymbol{\gamma}\|\mid \\ \mu \mu . \mu \end{array}$ | $\begin{gathered} \text { L H } \\ i\|\mid \\ \mu . \mu \mu \end{gathered}$ | $\begin{aligned} & \text { HL } \\ & \|\mid \\ & \mu \mu \end{aligned}$ |  |
| Result so far <br> Interpolate <br> Remapping <br> Shift-Left <br> Moras | H H. L <br> $\mathrm{H}^{\dagger} \mathrm{H}$. L | L.L H | HL | H.H H HL <br> H H HL <br> $/ \neq / \neq$ $/$ <br> $\mu . \mu \mu$ $\mu$ |
| Result so far <br> Minor TS <br> OCP*H-H <br> VV-Level | $\begin{aligned} & \mathrm{H}>. \mathrm{L} \\ & \mathrm{HH} . \mathrm{L} \end{aligned}$ | L.LH <br> L.MM | HL <br> HL | H.H H  <br> H.H${ }^{\perp}$ L <br> H. HH  |
| Result+Stress <br> Actual STP <br> Phonetic form | $\left[\begin{array}{ll} \text { H H. } & \text { L } \\ {\left[\begin{array}{ll} {[--} & - \\ {[\text { 'góóßò }} \end{array}\right]} \end{array}\right.$ | $\begin{aligned} & \text { L.,MM } \\ & {[-,-} \\ & {[\text { mè,rēē }} \end{aligned}$ | 'HL <br> $\left.{ }^{\prime} \backslash\right]$ <br> 'bíà] | $\left[\begin{array}{lc} \text { H. HH } & \text { L } \\ {\left[l^{[ }(--)\right.} & 1-] \\ {\left[l^{\prime}(\text { úßúú })\right.} & \text {,kà }] \end{array}\right.$ |

In Phrase 3 of (57) the surface form [úßúú] has an even stress (that is, there is no rhythm to the word). This seems to be the same situation as that discussed for umai $k a$ 'it is the sore' in 12.11 above.

Some neutralisation of underlying tone differences can occur as a result of heavy syllable leveling, so that $m o o^{\mathrm{LH}} o o m o^{\mathrm{LH}} i^{\varnothing}$ ' my adze' and $m o o^{\mathrm{LH}} o o m o^{\mathrm{HL}} i^{\varnothing}$ ' my river' can both sound the same:
(57) Derivations of two declarative clauses with a possessive pronoun.


### 12.15 Sandhi blocking at phrasal boundaries

The same form of the Kope pronoun serves as both a possessive pronoun and as a stand-alone subject pronoun. Compare the two uses of $m o o^{\mathrm{LH}}$ ' 1 SG ' and $r u u^{\mathrm{HH}}$ ' 3 SG ' in examples (58) and (59). In the first sentence of each example the pronoun is used as a possessive, and in the second as a subject/topic.
(58) Pronoun used as possessive Pronoun used as subject/topic

| - | - | , ] | [ - |  | 1 | -] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Moo ${ }^{\text {LH }}$ | $a i b i^{\text {LH }}-i^{\text {® }}$ | $k a^{\mathrm{HL}}$. | Moo ${ }^{\text {LH }}$ | $a i b i^{\text {LH }}$ | rautu ${ }^{\text {HL }}$ | $k a^{\mathrm{HL}}$. |
| 1SG.POS | paddle-ART | DECL | 1SG | paddle | with | DECL |
| 'It is my pa | addle.' |  | 'I have | a paddle.' |  |  |

(59) Pronoun used as possessive Pronoun used as subject/topic

| - | - - | 1-] | [ ${ }^{-}$ |  | - - | -] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $R u u^{\mathrm{HH}}$ | $a i b i^{L H}-i^{\varnothing}$ | $k a^{\mathrm{HL}}$. | $R u u^{\text {HH }}$ | $a i b i^{\text {LH }}$ | rautu ${ }^{\mathrm{HL}}$ | $k a^{\mathrm{HL}}$. |
| 3SG.POS | paddle-ART | DECL | 3SG | paddle | with | DECL |
| 'It is his pa | ddle.' |  | 'He has | a paddle |  |  |

It can be seen that there is a tone sandhi effect between the possessive use of the pronoun and the following noun - the $/ \mathrm{LH} /$ tone of $a i b i^{\mathrm{LH}}$ is changed to HL by the After-H-Fall rule in the first sentences of each pair of examples.

In the second sentences of (58) and (59) the pronoun is the topic component and the noun is in the comment component of the sentence. The loss of length (and any pitch contour) of the topic pronouns can be attributed to a low focus level on the topic; the focus is rather on the noun, $a i b i^{\text {LH }}$, which is stressed and ends in a high tone.

There are some minor tone sandhi effects across the phrase boundary, for example, the rise on the first syllable of $a i b i^{\text {LH }}$ in the second sentence of (59) is leveled (to avoid a HLH sequence). Major tone sandhi effects, however, do not take place across that boundary.

Derivations of the surface patterns of a possessive and topic use of $m o o^{\mathrm{LH}}$ ' 1 SG ' are given in (60).

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{(60) Pron
Word} \& \multicolumn{3}{|l|}{ronoun used as possessive} \& \multicolumn{4}{|l|}{Pronoun used as subject/topic} \\
\hline \& \(\left\lvert\, \begin{aligned} \& \text { Sen } \\ \& 1\end{aligned}\right.\) \& \& 3 \& \begin{tabular}{l}
Senten \\
1
\end{tabular} \& \[
\text { ce } 2
\] \& \[
3
\] \& \\
\hline Phonemic Gloss English \& \[
\frac{M o o}{1 \mathrm{SG}}
\] \& \[
\begin{aligned}
\& i^{i^{\text {H. }}-i^{\varnothing}} \\
\& \text { ddle } \\
\& \text { addle.' } \\
\& \hline
\end{aligned}
\] \& \[
\begin{aligned}
\& k a^{\mathrm{HL}} . \\
\& \mathrm{DECL}
\end{aligned}
\] \& \[
\begin{aligned}
\& \hline \mathrm{Moo}^{\mathrm{LH}} \\
\& 1 \mathrm{SG} \\
\& \text { 'I have }
\end{aligned}
\] \& \begin{tabular}{l}
\(a_{i b i}{ }^{\mathrm{LH}}\) \\
paddle \\
a paddl
\end{tabular} \& \begin{tabular}{l}
rautu \({ }^{\mathrm{H}}\) \\
with
\end{tabular} \& \[
\begin{aligned}
\& k a^{\mathrm{HL}} . \\
\& \mathrm{DECL}
\end{aligned}
\] \\
\hline \begin{tabular}{l}
UTP \\
Major TS \\
NF-LH-Flat \\
After-H-Fall
\end{tabular} \& LH \& L H \(\varnothing\)

$H L$ \& H L \& $$
\begin{aligned}
& \mathrm{L} H \\
& \mathrm{~L} \text { L }
\end{aligned}
$$ \& L H \& H L \& <br>

\hline
\end{tabular}

| Result so far <br> Mapping <br> Moras | Sentence 1 |  | Sentence 2 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \mathrm{LH} \\ & \mid{ }_{\mu \mu} \end{aligned}$ | $\begin{array}{rr} \text { HL } \varnothing & \text { HL } \\ \text { i } \mid \text { \| } & \mid \\ \mu \mu \mu-\mu & \mu \end{array}$ | $\begin{array}{\|l} \mathrm{L} L \\ \|\mid \\ \mu \mu \end{array}$ | $\begin{aligned} & \text { L H } \\ & \mu\|\mid \\ & \mu \mu \mu \end{aligned}$ | $\begin{array}{rr} \text { H L } & \text { H L } \\ \boldsymbol{\beta} \mid & \mid \\ \mu \mu \mu & \mu \\ \hline \end{array}$ |
| Result so far <br> Interpolate <br> Merge-HL <br> Delete-Tone | LH | $\begin{aligned} & \text { H H L L HL } \\ & \text { H } \gg \text { L } \\ & \text { H } \ggg>\text { L } \end{aligned}$ | L L | L L H | $\begin{aligned} & \text { H HL HL } \\ & \text { H }>\mathrm{L} \\ & \mathrm{H} \ggg \text { L } \\ & \end{aligned}$ |
| Result so far <br> Minor TS VV-Level <br> Focus-Step <br> Declination | $\begin{array}{\|c} \hline \mathrm{LH} \\ \\ \\ \\ \\ \\ \hline \end{array}$ | $\begin{gathered} \text { H } \ggg \text { L } \\ \text { HH MM } \\ \text { HH MM } \end{gathered}$ | L L <br> ${ }^{\text {² }}$ L | $\begin{gathered} \hline \text { L L H } \\ { }^{\dagger} \mathrm{L} \text { L H } \end{gathered}$ | $\begin{array}{cc} \hline \text { H } \gg & \text { L } \\ & \\ \text { H H }> & \\ { }^{4} \text { H H }> & \end{array}$ |
| Result+Stress <br> Actual STP <br> Phonetic form | $\begin{aligned} & \text { 'MH } \\ & {\left[\begin{array}{l} \text { [ } \end{array}\right.} \\ & {\left[\begin{array}{l} \text { mṓ } \end{array}\right.} \end{aligned}$ |  | $\left\lvert\, \begin{aligned} & \text { LL } \\ & {[-} \\ & {[\text { mò }} \end{aligned}\right.$ | 'MMH <br> 'āí bí |  |

The derived surface tone patterns are quite close to the actual surface tones. The main discrepancy is the predicted extra high surface pitch on the second syllable /bi/ of $a i b i^{\text {LH }}$ 'paddle' in Sentence 2 is not realised, and there is a rise on /ai/ instead. One possible explanation for the lower pitch is that the stress expected for /bi/ had to be moved back to the preceding syllable, because /bi/ is only one mora and comes immediately before another syllable, /rau/, which has attracted stress for multiple reasons: it is word-initial, heavy, and the highest pitched syllable of that word (rautu ${ }^{\mathrm{HL}}$ 'with'). (See discussion on this point in §12.10.1.) Another possible explanation is that rautu 'with' has a more complex tone pattern than thought, such that it is behaving as a clitic and has caused a Shift-Left action. Further research will be needed to resolve this.

A similar blocking of sandhi across the boundary between topic and comment is seen in sentences that start with aire ${ }^{\text {LH }}$ or ara $^{\text {LH }}$ 'here/this' as topics, and a similar flattening of the LH tone pattern to LL takes place as the focus is directed to the predicate.

### 12.16 A note on intonation

I undertook a brief study of the intonation of one Kope narrative, "Visit to Bavi", using audio from Schulz (p.c.). (This can be found glossed as text 3 in appendix 2 part II of this volume). When I observed the final pitch contour of every phrase I
could discern three distinct contours there - rising, level, and falling. These seemed to be different from word tones, in that they were particularly associated with the last syllable of the phrase, which was often lengthened, especially for level intonation; and these contours seemed to provide information relevant to the role of the phrase in the larger discourse. Consider the following extract from the "Visit to Bavi" narrative. Note that many phrases end in a lengthened syllable (shown by the doubled or trebled vowels). The tone patterns and glosses of each individual word are not shown, as they are irrelevant to this discussion; what is relevant are the pitch trends found on the last two syllables of each phrase, which are marked on the vowels and summarised as arrows after the Kope phrases:

TABLE 54. EXtract from a Kope narrative showing phrase-Final intonation

|  | Kope |  | English |
| :---: | :---: | :---: | :---: |
| 29b | Rimo irodau dūūmōōo, | $\rightarrow$ | As we started going, |
| 29c | rii-ro a'āī kāā, | $\rightarrow$ | they said, |
| 29d | "Beroi aamàà'ō; | $\checkmark$ | "When the bell rings, |
| 29e | turiaha ita iomohuu'ōūmò, | $\downarrow$ | everyone must move (the meeting) out, |
| 29f | hūmōī. | 1 | to the mouth of the creek." |
| 29 g | Ohiobai'oi-ro sipikai imodau dūūmōōō, | $\rightarrow$ | The boys started carrying the speakers |
| 30a | húmóí, | $\rightarrow$ | to the mouth of the creek, |
| 30b | pariki re'ei idee'áí kà, | 1 | and put them near the hall, |
| 30c | parikii hōōhòì. | $\downarrow$ | in front of the hall. |
| 30d | Híēīdāā, | $\rightarrow$ | From that point, |
| 30e | rāárāí | $\checkmark$ | as for the (audio) gear, |
| 30f | iiroru'u dūūmōōō, | $\rightarrow$ | we started connecting it up |
| 30 g | kāīrè. | 1 | and that was it. |
| 31a | Rīmōó - | $\checkmark$ | We - |
| 31b | beroi āā'óí, | $\nearrow$ | when the bell rang, |
| 31c | kiauka rimo iomohùù'ōī kā; | 7 | alright we moved (the meeting) out; |
| 31d | rimo rodau dūūmōōō, | $\rightarrow$ | and having gone, |
| 31e | emi'ei tutíí kāà. | $\downarrow$ | we each sat down. |
| 31f | Kààā, | 7 | And then |
| 31g | prougremui rii-ro oomahoròì kā - | $\nearrow$ | they started the program: |
| 32a | miusiki ede'āī kāā, | $\rightarrow$ | They put on music - |
| 32b | gospol miusíki. | $\downarrow$ | gospel music. |

What we can see is that when there is a level-pitched intonation, there is an anticipation of more information to come, e.g. lines $29 b-\mathrm{c}$ lead up to the delivery of the instruction to move out in 29 d -e; when there is a rising-pitched intonation, the information to come is particularly interesting because it anticipates a new discourse direction, e.g. lines 31a-c anticipates the moving out in 31d; and when there is a falling-pitched intonation, it signals that the information is complete, e.g. 31e concludes the anticipated moving out. This latter intonation often corresponds to the end of a paragraph in a transcription.

Occasionally a "follow-up" clarification is being given for information already supplied, e.g. lines 29 f and 30 c , and these seem to follow the intonation of the associated main clause.

Knowing how intonation works helps the researcher be aware of why or how tone in utterance-final words may vary. Clauses that are elicited are highly likely to have a falling intonation, as the information given is seen as a complete unit. Extracts from longer texts, however, are likely to be affected by any of the three intonations, depending on the pragmatics of the discourse.

For completeness we can express the effect of intonation on an utterance as a rule that may over-rule part of the Declination rule:

## (61) Intonation

According to intonation options chosen by the speaker, the final mora of a phrase may be lengthened and kept at the pitch level of the preceding mora; or it may even be raised above that pitch with optional lengthening.

$$
\begin{aligned}
\mathrm{T}_{\mathrm{i}} \mathrm{~T}_{\mathrm{j}} & \left.\rightarrow \mathrm{~T}_{\mathrm{i}} \mathrm{~T}_{\mathrm{i}}[+ \text { length }] / \ldots \text { \#[end of phrase with level intonation }\right] \\
\text { or } & \left.\rightarrow \mathrm{T}_{\mathrm{i}}{ }^{\dagger} \mathrm{T}_{\mathrm{i}}[ \pm \text { length }] / \ldots \text { [end of phrase with rising intonation }\right]
\end{aligned}
$$

### 12.17 A summary of the Kope tone rules

Taking account of focus or emphasis is very important for a satisfactory analysis of Kope tone. Focus on particular elements of the phrase is something that the speaker controls, and it affects the resulting surface tone. The key finding is that elements with a low focus are lower in pitch, have a shorter pitch range, weaker stress, and may have a shortened duration. For example, moo ${ }^{\text {LH }}$ meree ${ }^{\text {LH }}$ 'my child(ren)' can have a low or high focus on the first word, with results [mò ßè 'rè:í] 'my child(ren)' and ['mōő mé, rē:i] ' $m y$ child(ren)' respectively.

Another key finding is that for Kope the mora is the tone bearing unit (TBU), and each tone is associated with at least one TBU, but each TBU is associated with only one tone, i.e. tone patterns of two or more tones require two or more tone bearing units for their expression.

A third key finding is that in Kope the end of the word and of the phrase is very important - this is where most of the affixation and cliticisation takes place, and it is where the tone patterns (and probably stress-rhythm patterns) appear to be anchored.

Below I give graphical summaries of arguably the eleven most interesting features of the Kope tone system. (A complete list of the tone rules that have been posited throughout this paper has been compiled and appears in Appendix 1.)

1. Vowels can be short (one mora) or long (two moras); diphthongs are also two moras. The mora is important for both the distribution of the individual tones of tone patterns and the assignment of stress. (See $\S \S 12.5 .2$ and 12.11 point 3.)

| length: | short | long | diphthong |
| :--- | :--- | :---: | :--- |
|  | - | - | - |
| moras: | 1 | 2 | $1+1=2$ |

2. Phrase-final vowels have an extra mora, except perhaps if the pitch is low-falling. The extra mora serves as a TBU for intonation (rising, level, or falling). (See $\S \S 12.5 .2$ and 12.16.)

| length: | short | long |
| :--- | :---: | :---: |
| moras: | $\overline{2}$ |  |
|  |  |  |

3. The mora is the tone bearing unit. A tone pattern including a $H$ tone is not allowed on a single mora - the contour has to be spread over at least as many moras as their are tones in the tone pattern. If there are more tones than moras, either tones have to be deleted (provided the contour can be preserved), or else extra moras have to be generated. (See §12.2.2.)

| tones: | T | T | T | T | T | T | T | T T | $* \mathrm{~T} T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| mapping: | $\mid$ | $\mid$ | $\mid$ | $\mid$ | $\mid$ | $/ \backslash$ | $/ \backslash$ | $\mid$ | $* \backslash /$ |
| moras: | - |  |  | - |  | - | - |  | - |

4. All possible H-containing two-value tone patterns occur on two-mora nouns; an additional H -containing three-value pattern occurs on three-mora nouns, as well as left-spreading extensions of the two-value patterns. (See § 12.3.)

5. Changes in pragmatic focus across a word boundary of a phrase results in a higher pitch at the boundary for the word in focus. (But equal focus across the word boundary results in equal pitch across the word boundary.) (See § 12.7.)

| focus balance: | + Foc \#-Foc | + Foc \# +Foc | -Foc \# +Foc |
| :--- | :---: | :---: | :---: |
| boundary changes: | $-\#-$ | $-\#-$ | $-\#-$ |

6. Major tone sandhi occurs mainly in association with the /LH/ pattern, which changes to a LL pattern when not in focus in word 1 of a phrase. In that case all tone patterns in word 2 retain their underlying pattern. When that is not the case, all patterns in word 2 tend to change to a HL pattern (independent of focus), and this change is obligatory with the $/ \mathrm{LH} /$ pattern. (See (17) and (19).)

| focus balance: | $[+\mathrm{Foc}] \#[-\mathrm{Foc}]$ |  | $[+\mathrm{Foc}]$ | $\#[+\mathrm{Foc}]$ | $[-\mathrm{Foc}]$ | $\#[+\mathrm{Foc}]$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| boundary changes: | - | $\#-$ | - | $\#-$ | - | $\#-$ |  |
| $/ \mathrm{LH} /+/ \mathrm{LH} / \rightarrow$ | L H | ${ }^{+} \mathrm{H}$ L | L H | H L | L L | L | H |

7. When two H tones from separate morphemes are moved so that they are both on the same morpheme, the second one is downstepped, in order to maintain a separate existence for these tones. (This change is a manifestation of the Obligatory Contour Principle - see (46).)

Contiguous Hs

$$
\begin{array}{ll}
\text { on separate words } & \text { on the same word } \\
\mathrm{H}_{\text {word-1 }} \# \mathrm{H}_{\text {word-2 }} \text { (equal focus) } & \mathrm{H}_{\text {word-1 }}{ }^{ \pm} \mathrm{H}_{\text {word-2 }} \#
\end{array}
$$

8. Some clitics have a /LL/ tone pattern, and at least one has no tone at all (represented by $\varnothing$ - its tone is adopted from the end of the preceding word). (See $\S \S 12.13$ and 12.6.)

9. A clitic with a short vowel may lengthen its vowel in order to gain a TBU so that its contour can be fully manifested (e.g. with $k a^{\mathrm{HL}}$ ); a tone can be deleted if it is already manifested sufficiently (e.g. with $r a^{\mathrm{LL}}$ ). This is what happens with two-mora/LH/ and $/ \mathrm{HH} /$ nouns. (See $\S 12.5 .2$. a and (40).)

10. A clitic with a short vowel may borrow a TBU from the preceding word, provided that that word may maintain its underlying or sandhi-changed tone contour. This happens with $k a^{\mathrm{HL}}$ and $r a^{\mathrm{LL}}$ following three-mora $/ \mathrm{LH} /$ and $/ \mathrm{HH} /$ nouns. (See $\S$ and (44).)

$$
+b i a^{\mathrm{HL}}+k a^{\mathrm{HL}}+r a^{\mathrm{LL}}+-i^{\varnothing}
$$

(noun ${ }^{\text {LH }}$ )

(L H) HL
( L ) LL
(L H)

(noun ${ }^{\mathrm{HH}}$ )

11. A clitic with a short vowel may merge its pattern with that of a preceding word if the contour of both will be maintained. This is what happens with $k a^{\mathrm{HL}}$ after /HL/ nouns (since they both have HL patterns). Any tone that does not have a TBU and is not a crucial part of the contour can be deleted. (See (37).)
$+b i a^{\mathrm{HL}}$
$+k a^{\mathrm{HL}}$
$+r a^{\mathrm{LL}}$

$$
+-i^{\varnothing}
$$

( noun $^{\mathrm{HL}}$ )

( H L) L L

(H L)


### 12.18 Conclusion

The rules summarised in the last section and listed in Appendix 1 account very satisfactorily for a lot of the tone-related phenomena of Kope in noun phrases, but the analysis is a work in progress, and there is no claim that it is complete. Also, Kope verbs have much more complex morphologies, and the tonal behaviour of verb phrases has been studied only enough to know that they need to be investigated more thoroughly.

While I have taken a rule-based approach to explaining the Kope tone system, I have also referred to various constraints - especially when it comes to stress - and an approach based on Optimality Theory would probably work very well.

## Appendix 1. The tone rules

The rules that describe and summarise that behaviour that have been posited at various points in the paper have been compiled here. They are listed here in an order that seems to work well.

In using the rules to derive the surface tone, first note which words are in focus and which are not; then apply the major sandhi rules, then the mapping rules, and finally the minor sandhi and adjustment rules.

## Summary of Kope tone rules and procedures

(1) Major tone sandhi

NF-LH-Flat. A/LH/ tone on a non-focused first word of a phrase is changed to a flat low LL. See (17).

## After-H-Fall:

a. $\mathrm{A} / \mathrm{LH} /$ tone pattern on word 2 or later keeps its tone pattern after a flattened $/ \mathrm{LH} /$, but becomes a fall after any other tone.
b. A/HH/ tone pattern on word 2 optionally becomes a fall. See (19).
(2) Mapping
a. Associate. Associate the last tone of the tone pattern of a morpheme with the the last mora of the morpheme, the penultimate tone with the penultimate mora, and so on, right-to-left, until either tones or moras are used up. See (3).
b. Spread-Left. If there are moras to the left that are not yet associated with a tone, associate them with the left-most tone of the pattern. See (4).
c. Spread-Right. A suffix without a tone is associated with and acquires the tone ( H or L ) of the immediately preceding mora. See (10).
d. Interpolate. When mapping results in a series of H tones followed by a series of $L$ tones, the tones between the leftmost $H$ and the rightmost $L$ are interpolated into a graduated descent from high to low. See (11).
e. HL-Merge. A /HL/ tone pattern on a particle (clitic) is merged with any $/(\mathrm{L}) \mathrm{HL} /$ pattern (or interpolated $\mathrm{H}>\ldots \mathrm{L}$ pattern) on the noun associated with it. See (34).
f. Delete-Tone. The number of tonal elements in a merged falling tone pattern $(\mathrm{H}>\ldots \mathrm{L})$ is shortened to the number of moras available. See (37).
g. Shift-Left. If there are more moras than tones in the first morpheme of a word, and fewer moras than tones in the second morpheme of a word, then the tone pattern of the first morpheme is shifted to the left by one mora and re-mapped, and the first (extra) tone of the second morpheme is then associated with the last (now freed up) mora of the first morpheme. See (44).
h. Add-Mora. After association of tones to moras, if there is one more tone value than there are moras, then an extra mora is added by lengthening the syllable to the right of the extra tone. See (40).
(3) Minor Tone Sandhi
a. Obligatory Contour Principle. Two contiguous H tones from different morphemes are not allowed on the same morpheme. To avoid this, the native H tone is raised to 'extra high', ${ }^{\wedge} \mathrm{H}$. See (46).
b. Dip Avoidance. A dip (HLH or HLLH) is resolved in two ways.
a. A/LHL/ tone pattern on word 2 keeps its tone pattern after a flattened /LH/ (LL), but the first L of the pattern is raised to H after any other tone. (This is optional when word 2 is in focus.) (i.e. LHL $\rightarrow$ HHL /H(L) $\qquad$ ).
b. The last L of $\mathrm{a} / \mathrm{HL} /$ or $/ \mathrm{LHL} /$ tone pattern on word 1 is raised to H if word 2 has a/LHL/ tone and is in focus. (i.e. (L)HL $\rightarrow$ (L)HH
$\qquad$ \#LHL [+Foc]. See (21).
c. Heavy Syllable Leveling. A long vowel or diphthong that has a rising contour is leveled if followed by a continuation of the rising pattern; if it
has a falling contour it is leveled if followed by a continuation of the falling pattern. See (55).

## d. Focus-Step.

i. When word 2 of a phrase is in focus and word 1 is not, the H tone value of word 2 is upstepped.
ii. When both words in a phrase are equally in focus, then the $H$ tone value of word 2 is made level with the tone ending word 1.
iii. When word 1 of a phrase is in focus and word 2 is not, the $H$ tone value of word 2 is downstepped below the level of the tone ending word 1. See (25).
e. Declination. A phrase-initial or -medial $L$ tone (or sequence of $L$ tones) is pitched higher than a phrase-final $L$ tone. (But a level-toned intonation can override the lowering of a phrase-final L.) See (8).
f. Intonation. According to intonation options chosen by the speaker, the final mora of a phrase may be lengthened and kept at the pitch level of the preceding mora; or it may even be raised above that pitch with optional lengthening.

## Appendix 2. <br> Normalising tone data

Since musical melodies are perceived as notes on a logarithmic scale (such as a semitone scale), it makes sense to study tone melodies on the same scale. To do this, I first transformed the pitch measurements of each rise or fall in tone into musical interval measurements on a semitone scale using the formula $\mathrm{i}_{\mathrm{ab}}=12 \times \log _{2}\left(\mathrm{fO}_{b} / \mathrm{f}_{\mathrm{a}}\right)$, where $\mathrm{f}_{\mathrm{a}}$ is the fundamental frequency of the first of a pair of pitch measurements, and $\mathrm{f}_{\mathrm{b}}$ is that of the second. For example, one instance of korobo ${ }^{\text {LHL }}$ 'wind' had pitch measurements of 166 Hz for the first syllable, 182 Hz for the second, and a contour of $141-106 \mathrm{~Hz}$ for the third; these four pitch data points were transformed into three intervals, namely 1.6 semitones $\left(=12 \times \log _{2}(182 / 166)\right)$ between syllables one and two (a rise), -4.4 semitones between syllables two and three (a fall), and -4.9 semitones over the contour on syllable three (also a fall).

There were multiple recordings of each particular tone pattern (or "melody"), so all the semitone data for the first interval of a pattern were averaged, and then the same was done for the second interval, and so on for the whole pattern. For example, the average interval sizes for the set of /LHL/ words measured were $2.2,-5.2$, and -4.1 semitones respectively.

The graphs of each tone pattern melody were then composed by linking together the series of averaged interval measurements that make up that pattern. The first "note" of the melody was calculated from the difference between the maximum average pitch measurement in the data, and the average pitch measurement of the first "note" of the melody, in terms of a drop in semitones below zero. The result is that every note of a melody will be less than or equal to zero on the semitone scale. (The placement of the zero is actually arbitrary, and does not affect the shape of the graph.) For example, with the maximum average pitch in the data being 207.3 Hz , and the average pitch of the first syllable of the LHL pattern being 161.8 Hz , the first note of the averaged LHL tone melodies was set at -4.3 semitones. From there the rest of the melody went up to $-2.1(-4.3+2.2)$ for the second syllable, and down to -7.3 for the
start of the third syllable $(-2.1+-5.2)$, contouring down to -11.4 at the end of that syllable $(-7.3+-4.1)$. (This method of tone melody normalisation on a semitone scale is similar to other methods described by Zhang (2018)).

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[^0]:    1 The vowel $i$ between $p$ - 'D.PST' and $r$ - ' 1 P ' in words such as $p \underline{i}-r$-oo' $u$ 'I came (D.PST-1P-come)' is epenthetic, in order to preserve the CV syllable pattern. Note, there is another verb prefix $p$ 'jussive' (e.g. p-odau 'let him go') that does not feature in this paper .

[^1]:    2 This prefix occurs in the same position on the verb that the irrealis form $m_{p}$ - occurs.
    3 Schulz (2018) originally argued for the number prefix to mark object only, but this study has uncovered evidence for it also marking certain kinds of intransitive subjects, i.e. it marks absolutive (see §11.4.5).

[^2]:    4 This story was written by Allie Willie Mutai and published in Petterson (ed. 2007) as "Mo ra'aibou romoabai Urio Abeai-ro - How God Helped Me".

[^3]:    5 The " $p$ " is for precise tense, but it is also because the tense marker is $p$ - in narratives set in the "distant past".
    6 The " $i$ " is for imprecise tense, but it is also because the tense marker is $i$. .

[^4]:    7 The use of general-past tense verbs in relative clauses concurs with the discussion in Schulz (this volume, §3.3.4) concerning 'reduced morphology' being a distinguishing feature of subordinate clauses.

[^5]:    8 Schulz (this volume, §4.2.2) notes that the $m$ - form of the second and third person marker involves irrealis, which is why the free translation has 'it must have...'

[^6]:    9 The two identical occurrences of this verb in 3a-b and 4a-b actually refer to the same event, and the repetition serves to bridge two episodes of the story in a head-tail linkage. Head-tail linkages do not seem to be very common in Kope.

[^7]:    10 There is some ambiguity in the morphology of this apparent $i$-verb, analysed here as $i_{t}-\varnothing_{p}-i_{n}-m_{c}-$ ara'eai (PST-2|3.REAL-PL.ABS-CAUS-break.apart) 'and he (the father) caused them (the bones) to break apart'. One alternative analysis is as a background nominalised verb $i_{n}-m_{c}$-ara'eai-i (PL.ABS-CAUS-break.apart-DET) 'breaking them (the bones) apart', which is more or less how Schulz has analysed it. However, the lack of focus involved in this analysis does not fit well in a climactic event sequence. Another alternative is as an irrealis verb $i_{t}-m_{p}$-ara'eai (PST-2|3.IRR-break.apart) 'until it (the bone) must have broken apart'. However, the use of irrealis does not really suit the situation either - the breaking apart of at least two neck vertabrae was not in doubt.

[^8]:    11 The analysis given here is based on a re-edited version of the story which is much better-reading and closer to the original manuscript than the published but not so well edited version (Petterson 2007) that I had passed on to Schulz, and which she analysed in Schulz (2018), shown in appendix 2 to Part II of this volume. The corrected sentences are 19-20, and they are re-glossed in example (66) below. (There is some reordering of clauses, but Schulz's sentence numbering has been retained).
    12 Place names and personal names are abbreviated in this chart in order to save space.

[^9]:    13 Compare this also with pi- $r_{p}-\varnothing_{n}$-orobu (D.PST-1P-SG.ABS-sleep) 'I slept' (with neither plural marking, of course); and, without the first person involvement, compare with allowable forms $p-\varnothing_{p}-i_{n}-(o) r o b u$, 'they slept (D.PST-2|3.REAL-PL.ABS-sleep)' and $p-\varnothing_{p}-\varnothing_{n}$-orobu 'he/she slept (D.PST-2|3.REAL-SG.ABSsleep)'.

[^10]:    14 The author actually wrote the verb phrase concerned as <irei moo'a>, which makes phonological sense, as it helps prevent the reader inserting a glottal stop between ire 'there' and the prefix $i$ - 'DEI'. It is a natural tendency in Kope to instert a glottal stop before a word-initial vowel, but it is unwanted here. This morpheme-splitting spelling device is used elsewhere in the current orthography, e.g. Buri $=$ ato (Buri=LOC) is spelt $<$ Buria-to $>$. (That it is unacceptable to insert a glottal stop in this context may also indicate that ire 'there', like ato 'LOC', is actually a clitic in this construction, rather than a separate word.)

[^11]:    15 It may also be the habitual form - further research is needed to resolve this. Note that when the trees are the intransitive subject, this is marked by the plural subject marker, but not marked by the absolutive plural in (69) and (70) - I think this is because the trees are fixed in place - not moving around as individuals as the crabs do in (69), where the absolutive plural is marked, but not the plural subject.

[^12]:    16 Interpreting the form as $i-00$ 'a *'they are there (PL.ABS-be)' can be dismissed because there is a special plural absolutive form of this verb, $i i$ ' $a$ 'be there (plural)', as used, for example, in (67).

[^13]:    17 It could be argued that the verb in 5 c is marked with only the absolutive plural $i_{n}$ - (for the bags) i.e.
    *i-m-odau-mo 'they carry them (PL.ABS-CAUS-go-PL.SBJ)', but the audio recording shows that the verb is pronounced [i:vodavvo], with a long initial /i/ vowel; so it is likely that there are two $i$ prefixes, i.e. $i_{t}-\varnothing_{p}-i_{n}-m_{c}$-odau-mo. 'and they carried them (PST-2|3.REAL-PL.ABS-CAUS-go-PL.SBJ)'.

[^14]:    18 It could be argued that this $i$ - is actually the general past tense marker, not a plural subject marker. A counter-argument is that this would be quite odd, because $i k a$-verbs are nominalised forms, with no person marking, whereas in other verb morphologies tense always precedes person marking.
    19 These verbs may take all subject number suffixes, e.g. oo'u-mo '(you people) come! (come-PL.SBJ)', and transitive verbs derived from them mark object plural with the absolutive plural prefix, e.g. $\varnothing_{n^{-}}$ om-odau 'carry it away (SG.ABS-CAUS-go)' vs $i$-m-odau 'carry them away (PL.ABS-CAUS-go)', and similarly $\varnothing_{n}$-om-oo'u/i-m-oo'u 'bring it/them', $\varnothing_{n}$-em-aa'o/i-m-aa'o 'speak forcefully to him/them', $\varnothing_{n}$-em-a'ai/i-m-a'ai 'give to him/them'.

[^15]:    20 For singular, the suffix is -die, but there are no instances of it in these texts. See Schulz (this volume, §5.5).

[^16]:    21 This zero affixation for the third person singular intermediate past is distinguished phonologically from the present tense, reportedly by a lengthened vowel (see Schulz this volume, §5.5), but it might be a change in tone rather than length - a matter to be investigated.

[^17]:    22 This discovery effectively clarifies and re-organises Schulz's clause classification system of primary, secondary and subordinate clauses along the dimensions shown in Table 39. Her "primary clause" verbs are my " $p$-verbs", her "secondary clause" verbs are essentially my "ika-verbs", and her "subordinate clause" verbs are essentially those marked for general past (my " $i$-verbs") and the background nominalised verbs (see Schulz this volume, §3.3.4, §3.1.2 and §4.3).

[^18]:    ${ }^{23}$ It is, however, also possible to mark fully tensed and person-marked verbs with -i 'DET' when they are placed in relative or other kinds of subordinate clauses.
    $24 I k a$-verbs should not be confused with verbs marked by the aspect suffix -ika 'HAB'.

[^19]:    25 There is also a trial subject marker (Schulz this volume, §4.3.4), but none have come up in the texts studied in this chapter, so I have not included them in the table.

[^20]:    1 Following Snider (2018:2), I use the term pitch to refer to "phonetic tone, or tone as it is perceived", and the term tone to refer to "phonological tone, or tone as it is realised in contrast with other tones." Similarly, underlying tone pattern (UTP) refers to a contrastive, underlying sequence of low (L) and high (H) tones that apply to morphemes (Snider 2018:11,13; also Newman and Petterson 1990), and pitch pattern or surface tone pattern (STP) to a sequence that is not necessarily underlying (Snider 2018:41). I use the terms rising, level, falling, and peaking tones to refer to the tone sequences LH, HH, HL, and LHL respectively. (Peaking is often called 'rising-falling' in the literature.) The term contour is used to refer to a sequence of pitches or tones (see Crystal 1985, contour entry).

[^21]:    2 This is not an orthographic suggestion as such, but an iconic or other appropriate superscript tone symbol after a word may be worth testing in an orthography, especially one for a school dictionary, since a few speakers have been trained to whistle or hum whole word surface tone patterns.

[^22]:    3 Here I use $<$ and $>$ to enclose a class name in the manner of the Backus-Naur form.

[^23]:    4 This is different from the neighbouring language, Rumu [klq], which also has /HH/, /HL/, /LH/ and /LHL/ patterns. In Rumu all four patterns, even /LHL/, can occur contrastively on both monoand disyllabic words, apparently without any extra lengthening for /LHL/. For example, (using the same superscript notation as used for Kope in this paper) $k a a^{\mathrm{HH}}$ [ká:] 'carried (today)', $k a a^{\mathrm{LH}}$ [kă:] 'dog', $k a a^{\mathrm{HL}}\left[\mathrm{kâ:]}\right.$ 'your ( sg )', $k a a^{\text {LHL }}$ [kăì] 'two-leaf tree'; $k a p o{ }^{\mathrm{HH}}$ [kápó] 'rain' and $k a p o{ }^{\text {LHL }}$ [kàpô] 'snake' (Newman and Petterson 1990:49).

[^24]:    5 Interpolation from $L$ to $H$ does not apply when a $L$ tone has been spread to the left.

[^25]:    6 The word idomai 'eye' is the same in all other NE Kiwai dialects and also the neighbouring Kiwaian language, Kerewo, and there is no current evidence that it is a compound in any of them.
    7 By stress I mean a prominence due to an increase in loudness that is given to one syllable, relative to its neighbours. This loudness is caused by a more forced enunciation, and there is no simple way to measure this acoustically, although intensity (measured in decibels) must certainly be one of several contributing factors. (See Crystal 1985, stress(ed) and loudness entries.)

[^26]:    8 The formula used is $\left(\right.$ pitch $_{2}-$ pitch $\left._{1}\right) /$ pitch $_{1} \times 100$.

[^27]:    9 Note that a level-toned or rising-toned intonation can cancel the effect of Declination on the final syllable of a phrase - see the Intonation rule, (61).

[^28]:    10 The doubled length of a short vowel in a final syllable in the "isolation frame" is statistically significant; using Martin's data for disyllabic words to calculate the mean durations of vowels (with $95 \%$ confidence intervals), word-initial short vowels average $82 \mathrm{~ms}(79,85)(\mathrm{n}=134)$, while wordfinal short vowels average $156 \mathrm{~ms}(150,162)(\mathrm{n}=150)$. Word-initial long vowels, with a mean duration of $163 \mathrm{~ms}(155,172)(\mathrm{n}=36)$ are also double the length of word-initial short vowels. Wordfinal long vowels, with a mean duration of $257 \mathrm{~ms}(240,274)(\mathrm{n}=23)$, are treble the length of wordinitial short vowels. In word-medial syllables of three- or four-syllable words, short vowels average $83 \mathrm{~ms}(80,86)(\mathrm{n}=21)$, much the same as their word-initial counterparts, while word-medial long vowels average $140 \mathrm{~ms}(127,152)(\mathrm{n}=21), 13 \%$ shorter than their word-initial counterparts.

[^29]:    11 Note that the horizontal axis of the pitches and pitch contours graph is event based, not a continuous time scale; so the slopes of the lines do not reflect the speed of the pitch change.

[^30]:    $12 \mathrm{My} / \mathrm{HL} /$ noun data for isolation pronunciations had a median syllable ${ }_{2}$ :syllable ${ }_{1}$ duration ratio of 1.52:1, with quartiles at 1.33 and $2.03(\mathrm{n}=10)$. A much larger sample ( $\mathrm{n}=56$ ) of $2-\mathrm{mora} / \mathrm{HL} /$ nouns in Martin's data, however, has a median ratio of $1.99: 1$ with quartiles at 1.42 and 2.51 , much the same as the roughly $2: 1$ ratio seen in $/ \mathrm{LH} /$ and $/ \mathrm{HH} /$ data in the small samples used in this section. (Martin's data showed median syllable ratios of 1.93:1 for /LH/ and 2.11:1 for $/ \mathrm{HH} /$ words. However her data does not include phrases with $r a$ and $k a$, and so cannot be used for these graphs.)

[^31]:    13 I was not able to get a full data set with a consistently trisyllabic three-mora word, so I have used the two words available to effectively cover the behaviour of first and third syllables as short vowels in each frame.

[^32]:    14 In Rumu the tone sandhi change $\mathrm{LH}+\mathrm{LH} \rightarrow$ LL LH also occurs, but is much more widespread than in Kope, as it seems to be dependent on syntax rather than focus. The change $\mathrm{LH}+\mathrm{LH} \rightarrow \mathrm{LH} \mathrm{HL}$, on the other hand, is much more restricted in Rumu, occurring only in certain compounds (Newman and Petterson 1990:66, 73).

[^33]:    15 Interpolate and VV-Level (see (29)) rule applications have been omitted, as they cancel each other out.
    16 This was read from a book, and the reader, influenced by his English spelling knowledge, read <m> as [m], not the usual [ $\beta$ ].

[^34]:    17 Major tone sandhi involves pre-mapping changes to / $\mathrm{LH} /$ (obligatorily) and / $\mathrm{HH} /$ (optionally). The /HL/ and /LHL/ patterns are not affected by major tone sandhi.

    18 Mapping combines Association and Spread-Left and Spread-Right procedures.

[^35]:    19 It may well turn out that this rule applies to suffixes and compounds too.
    20 Because of the unnecessary complexity (and obscurity) involved in using ${ }^{\downarrow} \mathrm{H}, \mathrm{L}$, and ${ }^{\downarrow} \mathrm{L}$ for the same phenomenon, from this point on I will often use $>$ to represent intermediate downstepped tones output from Interpolation and HL-Merge rules, keeping $H$ and $L$ for the endpoints of the tone sequences.

