

I'saka
*A sketch grammar of a language of
north-central New Guinea*

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A sketch grammar of a language
of north-central New Guinea

Mark Donohue and Lila San Roque



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Abbreviations and conventions

The usual conventions for glossing first, second and third person as 1, 2 and 3 have been followed. A, S and P have been used descriptively to represent the syntactic roles of most agentive arguments of a primary transitive verb (and other arguments that pattern as it does), single argument of an intransitive predicate, and most patientive argument of a primary transitive verb (and other arguments that pattern as they do), respectively, following Comrie (1978) and Andrews (1985:68). The following additional abbreviations are used in the text and in glosses of examples:

ACC	accusative	N	weak phonetic nasalisation
ACCOM	accompaniment	N	phonological nasalisation
ADJ	adjective	NEG	negative
BEN	beneficiary	NM	non-masculine
c	coda	NN	strong phonetic nasalisation
C	consonant	NOM	nominative
COMP	completive	NP	noun phrase
DAT	dative	NPL	non-plural
DEIC	deictic	NSG	non-singular
DEM	demonstrative	NUM	number
DU	dual	o	onset
EMPH	emphatic	OBJ	object
EVID	evidentiality	PL	plural
F	Falling tone	POSS	possessive
F	feminine	PROHIB	prohibitive
G	glide	Q	interrogative
H	High tone	r	rhyme
H	human	R	Rising tone
IMP	imperative	REC	recipient
INSTR	instrumental	RED	reduplication
INTENSE	intensifier	RC	relative clause
IRR	irrealis	s	syllable
L	Low tone	SG	singular
LOC	location	SUBJ	subject
M	masculine	V	vowel
n	nucleus	w	word

Standard glossing conventions are used to break up vernacular text and its equivalent on the morpheme line: the hyphen '-' is used to separate morphemes forming one phonological word, and a space ' ' is used to mark off separate words. Punctuation marks are used according to English conventions. The usual star '*' is used to indicate an ungrammatical utterance, while a hash '#' is used for one that is either infelicitous for a particular context, or else acceptable only for some speakers, or one about which speakers vacillate in their judgements from time to time.

Updates

While we have tried to be as thorough as possible, it is more than likely that there will be some corrections, hopefully just typographical but perhaps factual as well, to this book. These can be found at <http://www.donohue.cc> (and then follow the links to I'saka), where they will be updated regularly. Any suggestions or corrections will be gratefully received at the email address listed on the I'saka page.

Acknowledgments

While we did *write* this sketch, a lot of other people have been behind it as well. The funding for the research that lies behind this work has been provided by Professor William Foley, who kindly shared some of his ARC grant with us, and by the University of Sydney. Without them, we never would have visited Krisa, to our loss.

In Vanimo the staff of the Department of Education, Sandaun Province, were kind and welcoming, making their resources and time available to us whenever possible.

Stefanie Klappa met, by chance more than design, with Mark in Vanimo in 1999, and the discussions that followed led us up the long, hot slope to Krisa. Thanks also to Stefanie for sharing so generously of her time and knowledge. We look forward to further collaboration with both her and Christin Kocher, another pioneering anthropologist in the area. Without the research hut that the FTRP (see §1.2) provided, our research into I'saka would have been quite different.

Alan McNeil provided company, shelter, food, conversation and, especially for Lila, *real* coffee when it was most needed. The work might have been done, but sanity would definitely have been impaired without Alan. Phillip Tjoeng has also gone beyond the call of any possible duty in taking care of us, caring about us, looking after us in many ways large and little and smoothing things out for us. Thanks Phillip.

Melissa 'Malesia' Crowther shared our first experience in Krisa, providing essential company to Lila while they were both trying to make sense of their time in New Guinea, and continuing to be the staunchest of friends, in her own inimitable jaunty way. Mim Corris is now sharing in the fun of working in Sandaun province. Simon Lear regarded this temporary lapse of sanity as something to be endured, and endure it he did.

Of course, without the generous and welcoming attitude of the people in Krisa this grammar sketch would not have been possible. Many people gave their hard work, hospitality, pedagogy, assistance and friendship, but especially Yanu Bau and Willy Wou Wake, who have such strong thoughts on their language and its future. Thanks, and we'll try to make it up to you.

Long as bilong ol dispela raitim, mitupela i laik tokim bigpela tenkyu tru i go long ol lain bilong Krisa; sapos yupela i no stap, orait dispela buk i no inap kamap. Eniwe, ol lain bilong Bau, Bewa, Kopi Camp, Melchior, Tapi na Wake, yupela i bin helpim mitupela planti long olgeta pasin. Tenkyu tru.

I kaipa, wei kaipa

(see §1.3.2)

Photographs

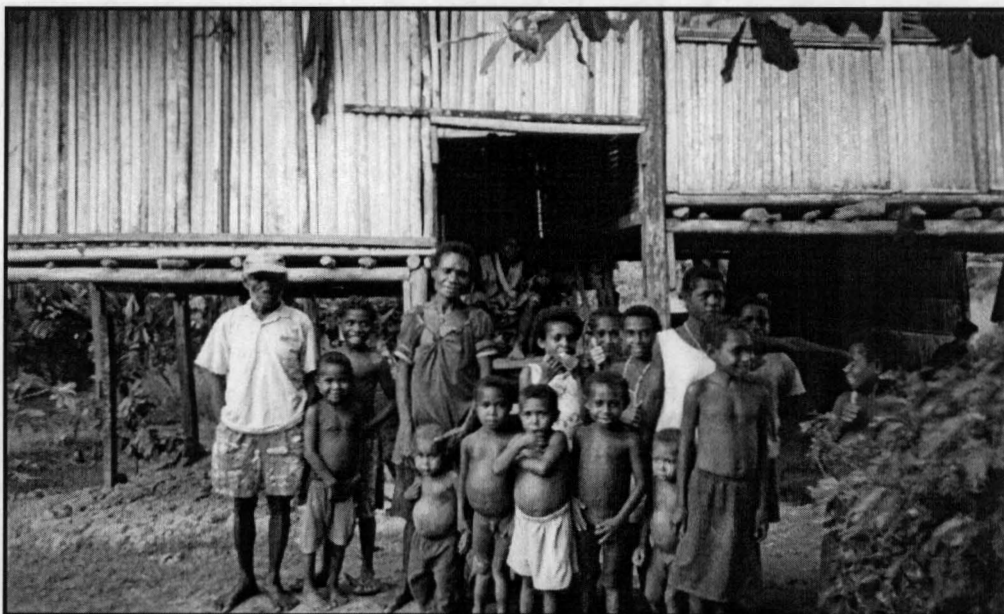
The following photographs give some small idea of the kind of people and environment that make up the community that is Krisa village. They are unabashedly biased towards depicting people with whom we spent more time, or who were most helpful in some way or another. The soccer game shows nicely the land around Krisa village, and is also such a social focus, along with the church, for the community that to leave it out would be to do a disservice to the village.



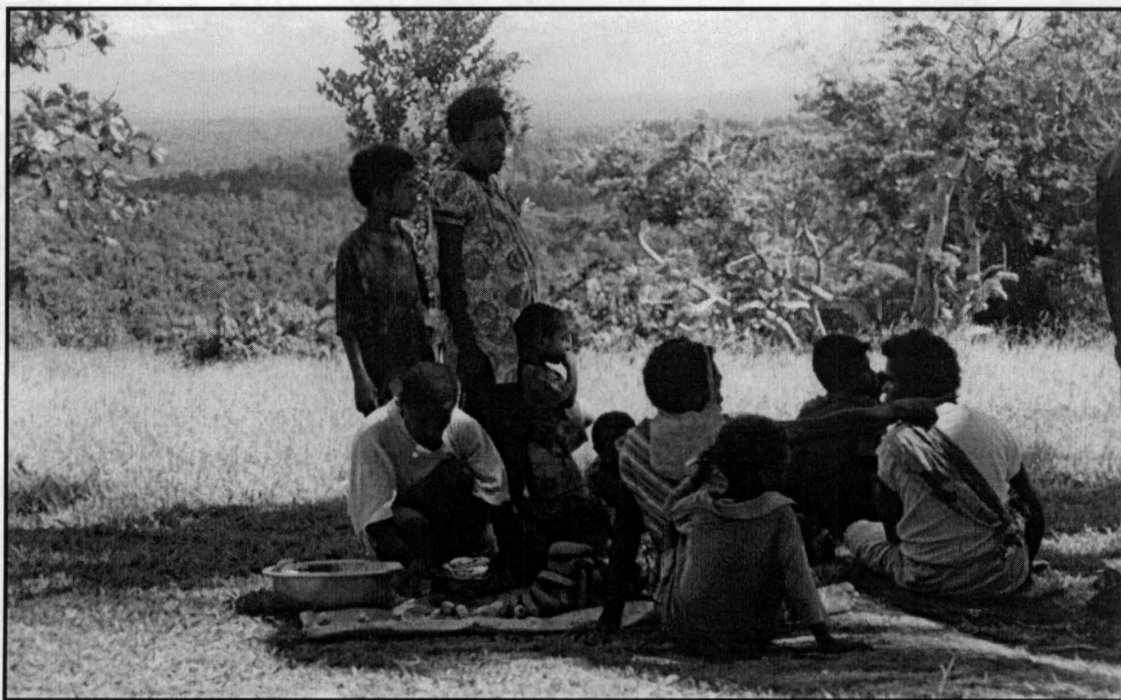
Picture 1: Willy Wou Wake and family at their bush house, near Krisa.



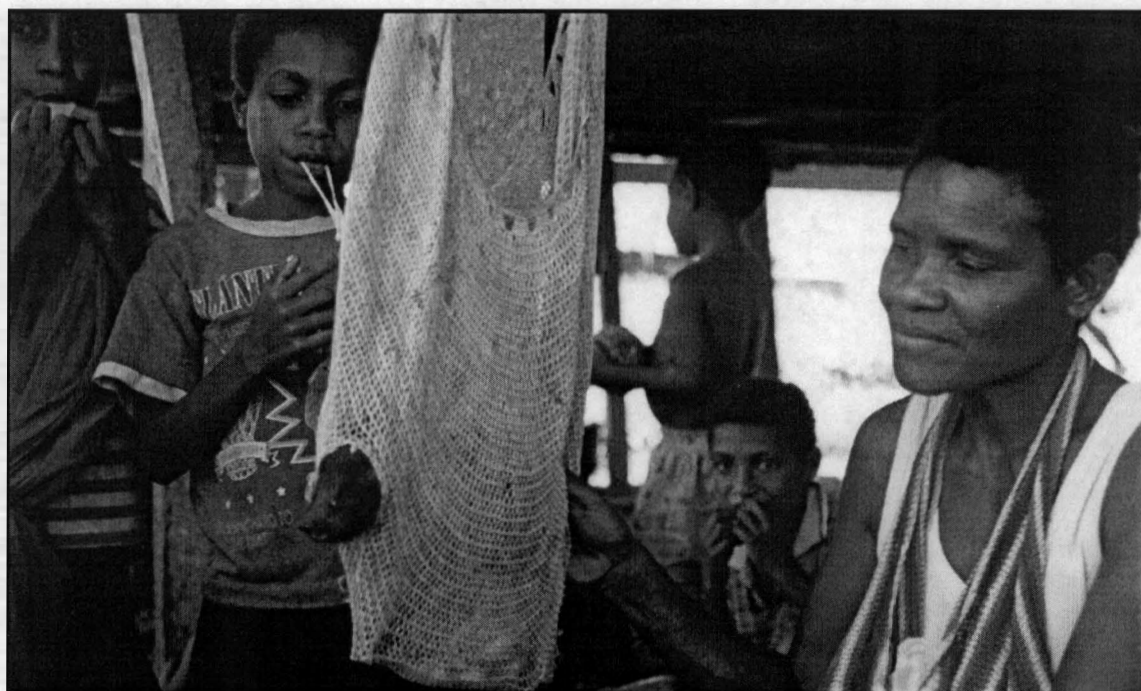
Picture 2: Bush house in the valley. Most of the inhabitants of Kriisa maintain a house in the village itself, and also live in a succession of bush camps on their traditional land. They spend up to half their time living in these bush houses, which are close to their sago lands, and in the middle of a hunting range.



Picture 3: Yanu Bau and family.



Picture 4: Watching soccer. A series of soccer games can go on all Sunday afternoon following church, bringing the whole village together, along with a lot of market activity.



Picture 5: Collette with a pig in a bag, brought to the regular market day.



Picture 6: Watching the soccer ball vanish over the edge of the plateau. Since there is only one ball in the village, this then calls for one of the more agile players to scramble down and fetch it. All the players get a well-earned break while the volunteer looks for the ball and retrieves it. The Pual valley in the background of the photograph, south of the Oenake plateau, ends with the Bewani mountains on the horizon.

1 *Introduction*

I'saka is the language spoken in the village of Krisa. It is also spoken in the off-shoot settlement at Pasi, four hours' walk north near the coast and closer to government administration, and also at numerous temporary bush camps about the plateau lands near Mount Asowa, which is the centre of the range of hunting and gathering for the people of Krisa village. The language is endangered in all senses of the word, inconsistently used in this one village, and sparsely used outside it. Close by in the larger population centre of Vanimo, different languages are spoken. Tok Pisin, the lingua franca of most of Papua New Guinea, has supplanted most of the traditional functions of I'saka. Nonetheless, I'saka still serves as an icon of the separateness and identity of the Krisa people (§1.3.2), and is still being passed on.

This is the first linguistic documentation of the I'saka language. Laycock (1973) tentatively classifies that language, which he calls *Krisa*, along with *Rawo*, *Puari* and *Warapu* (now known as Puare and Barupu), as members of the Krisa branch of the Sko phylum. In the light of more recent research this classification is not tenable: although the languages are all related to each other, as well as to the closely related languages of the coastal strip from Pasi to the Skou villages across the border into Papua, it is in a very different configuration to that proposed by Laycock (the classification that is followed here is described in §1.3). Since the publication of Laycock (1973), there have been occasional references in print to the position of I'saka within his classification, but no material on or references to the language have appeared, other than Donohue and San Roque (2000), and San Roque (2001).

The language of the people who live in Krisa village is more properly known as I'saka, the name preferred by native speakers, and also a name that is phonotactically possible in the language (see §2.6.1). In this work both terms will be used, but for different senses: the language shall be referred to as I'saka, and the people and their village as Krisa.

I'saka is unusual not only in terms of general world typology, but also in terms of the characteristics we might expect from a language of New Guinea, indeed even of the Macro-Skou family in which it finds its nearest cousins. Using the characteristics of a 'typical' Papuan language that Foley (1998) proposes, we find that I'saka can be accommodated into the phonological expectations for Papuan languages, but that is only because the prospect of complete allophony between voiced stops and voiced nasals was not considered by Foley (see §2.4.1 for discussion). Asmat (Voorhoeve 1965) also shows complementary and free distribution between oral stops and nasal stops; Clouse and Clouse (1993) describe just such a situation in languages of the Lakes Plains of West Papua. The latter languages are much

more likely candidates for genetic relatedness to I'saka than is Asmat or any of its relatives. Morphologically, I'saka shows more similarities with the Melanesian Austronesian pattern than the 'typical' Papuan pattern (that is, the highlands Trans New Guinea pattern that is usually evoked when referring to Papuan languages), with strict word order, no case-marking particles, and relatively simple morphology. Syntactically, I'saka is mainly right-headed at the clause level, but left-headed within the NP, as is to be expected (Dryer 1988). The language makes extensive use of light verbs (§5.3.1, 5.3.2), sometimes with a semantically specifying nominal, and sometimes without, relying on either discourse-contextual knowledge or on shared cultural knowledge concerning the activities performed with different things to resolve ambiguities. These points will all be examined in detail from Chapter 2 on, following a discussion of the sociolinguistic factors that are at play in the Krisa community.

1.1 Background

The village of Krisa is situated approximately 20km south of Vanimo, the capital of Sandaun Province (formerly West Sepik), in the extreme north-west of Papua New Guinea. The location of Krisa and Pasi with respect to the local provincial capital of Vanimo, and the closer town of Ossima in the Pual river basin, is shown in Figure 1. The villages north of the Oenake range represent those that speak languages related to I'saka in the (smaller) Skou family, from Skou Mabo in the west through to Vanimo. Between the Bewani mountains and this range, along the course of the Pual river, are the languages of the Bewani (Border languages) group, unrelated to the Skou languages. In the Bewani mountains to the southeast are some northern hamlets of Fas-speaking peoples such as Yo, relatives of whom have spilled over into the Serra Hills in the last few decades, but these areas remain sparsely populated.

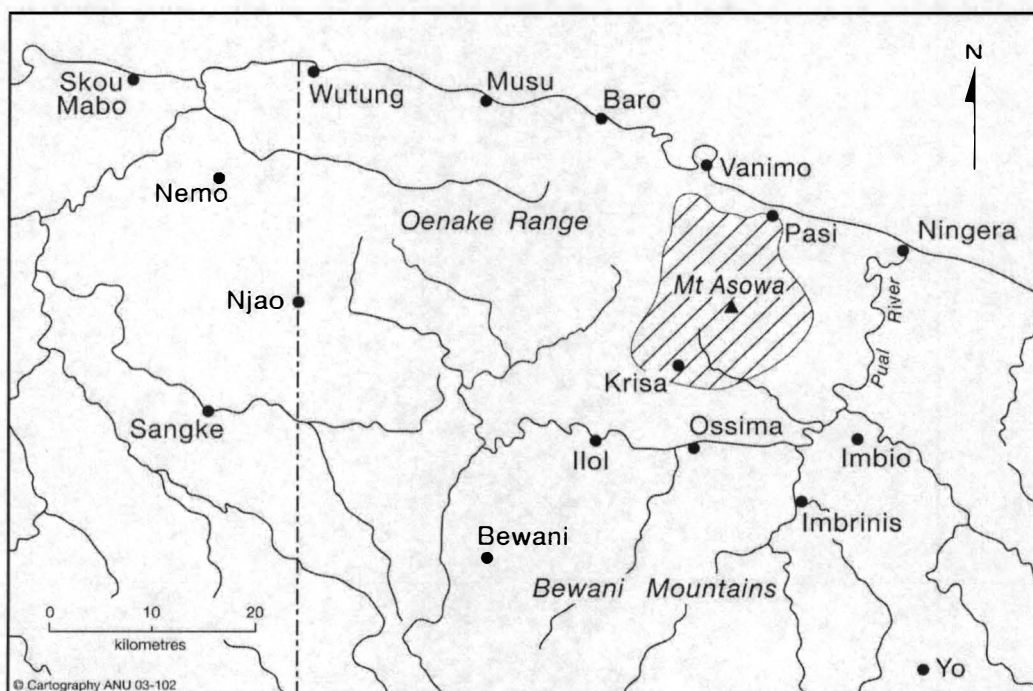


Figure 1: Map of Krisa and surrounding villages and the I'saka language area

The village is on the southern end of a plateau split by numerous small rivers at an altitude of approximately 300–400m, and looks south across the Pual valley to the Bewani mountains (see Figure 1). The location of Krisa and its surrounds in a broader New Guinea context is shown in Figure 2. In this map the shaded area represents the area of the map seen in Figure 1.

Krisa can be reached by a four-hour walk along a dirt road from Pasi, which is accessible by vehicle from Vanimo. The population of the village itself numbers approximately 600 (more than half of whom are children), and nearly the same number of people live in outlying settlement camps that follow the road to the coast (Klappa 1999a, 1999d), terminating in Pasi, the last I'saka-speaking settlement, which lies just off the northern slopes of the Oenake ranges. Finally, a few Krisa families live in Vanimo town; no Krisa people live further away than the surrounding villages, where they are found due to marriage to Osol, Osima or Ningera. This yields a total possible population for the ethnic group of somewhat less than 1000.

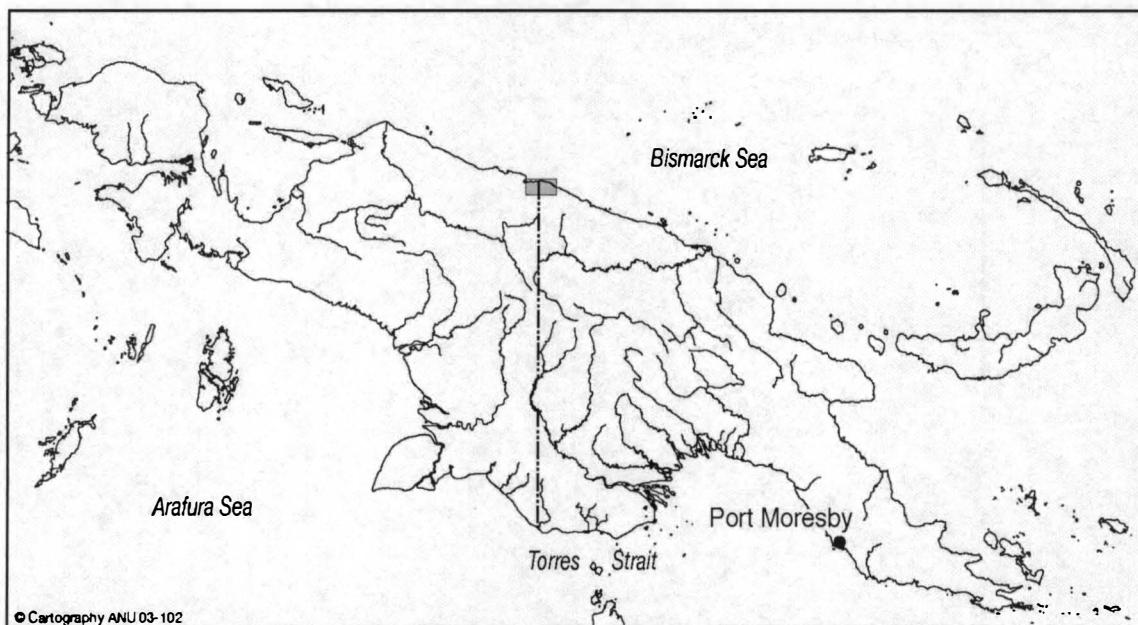


Figure 2: The location of the Krisa–Vanimo area in New Guinea

The following sections discuss the historical and modern context of the I'saka-speaking peoples, the position of I'saka amongst the languages of North-Central New Guinea, and the modern setting in which the language is spoken.

1.1.1 Contact history

The contact history of Krisa shows a varied range of outside influences over the last century and beyond, including early interaction with Malay bird-of-paradise traders and occupation by Japanese soldiers, as well as contact with missions and patrol officers, and the modern trade and interaction with contemporary Papua New Guinean society. There is evidence that the bird-of-paradise traders stayed in the Krisa area for some time on their expeditions, staying with the local people long enough for some of the locals to learn a

reasonable amount of the variety of Malay that they were using. Cheesman (1957:267) notes of one man she met in Krisa that

That old man could tell me the Malay for different species of paradise birds, and also the words for large, small, high, far; and he could count to ten in that language.

Initial exploration in the general Vanimo area was conducted around 1900 by German parties from the sea. This was followed by a joint German–Dutch inland expedition, which in 1910 travelled as far south as the northern slopes of the Bewani mountains, which is south of the Pual basin, itself south of the Oenake massif that is home to the Krisa people. There is some evidence that this expedition passed through the land of the Krisa people (Schultze Jena 1914).

Cheesman (1949: Chapter 23) presents a spirited account of life in Krisa (or, as she refers to it, 'Krissa') in the 1930s, based on her extended encampment there. The Trans-Pual Study of 1992 includes ethnographic information on Krisa (Simet & Ketan 1992); in the study on agricultural systems of Papua New Guinea, the area is categorised as agricultural system No. 07, denoting amongst others sago as dominant staple (Bourke et al. 1993).

A contact history of the local area, including both Krisa and the Pual river basin as well as the coastal areas around Vanimo, is summarised in Kocher Schmid (1996). Early publications in this area include the reports of Thomas (1942), a patrol officer in the area, and the passing notes of such chroniclers as Cheesman; in the main, the materials recorded refer to the coastal people west of Vanimo, and not the hinterland.

1.1.2 Modern environment

Krisa people survive largely on semi-cultivated crops (principally *sù* sago, *wesie* tulip [Gnetum (gnemon)] and *sòng* coconut), some small garden produce, game (such as *a* wild pigs, *aluwái* cuscus, *yilmùni*, *yonímùni* bush turkey, *yùng* birds, and occasionally bats) and other animal protein (such as *kùng* eggs and *babol* sago grubs). Two distinct forms of cultivation are practised, the traditional arboriculture (in which *téi* trees in the *wíysau* forest are sporadically tended and harvested) and the 'white man's garden', in which areas are cleared and planted with a variety of non-traditional vegetables such as corn and cucumber. (This style of agriculture did not become prominent until after colonial times, hence its association with whites. It is still thought to be the 'modern' and 'progressive' way to garden. See §7.1.) Sometimes the two methods are combined, as clearing for gardens may also involve locating and protecting promising young trees (Klappa 1999b; for an explanation of conflict between introduced agricultural techniques and the symbolic significance of the traditional cultivation methods, see Klappa 1999c).

Animal husbandry, such as typifies the New Guinea highlands and most ethnographic accounts of New Guinea societies, is not a strong tradition in Krisa. People may occasionally keep a pig or a cassowary chick, but do not maintain this consistently, nor place any special emphasis on it. This pattern of economic existence is in many ways typical of the northern lowlands of New Guinea.

Most families have both a more permanent village house and a series of temporary bush camps. The bush camps are situated in the village hunting reserves, and people will often spend weeks at a time there, processing sago and hunting game before returning to their village house and restocking the larder.

The village is divided into six traditional clans, *Isu*, *Wesóung*, *Dibí*, *Yeduwe*, *Wedi'* and *Asepupu*. Members of each clan, which is patrilineal, live on the land belonging to that clan, with their bush camps and their houses not trespassing on the land of other clans. This means that the village, as well as bush life, is well spread out: there are at least seven named areas within the Krisa village grounds, mostly hugging the southern escarpment of the plateau that rises above the Pual river basin. From east to west the named village locations are: *Abiy*, *Awaliakau*, *Coffee camp*, *Yeblei*, *Wuple*, *Suwa* and north, along the road to Pasi, *Bipo*.

No paid employment is available within the village beyond the positions of schoolteacher and Aid post worker. Some men have jobs in Vanimo, and women often make the trip to the Vanimo or Ossima markets to sell garden produce. In addition to this, a small food market is held twice weekly within Krisa itself. The economy of the village is only minimally dependent on the outside world.

The Krisa people have been connected to the Catholic church for many decades (though there are also small numbers of adherents of other Christian denominations in the village and in Pasi), and there is a sense that the Diocese (based in Vanimo) 'looks after them'. There is a church in the village, and most people attend, some zealously and some only intermittently. In addition to the church, there is some minor support for more radical evangelical Protestant denominations, but these are not strong enough to have their own church building. Several people anticipate that Jesus Christ will come to Krisa at some time in the near future, though his missing the new millennium was a let-down for many.

1.2 Recent history

Krisa lands (mostly hunting reserve) were logged extensively during the 1980s and early 1990s. During this time a road for logging vehicles was built to connect the village to Vanimo. Employment with the logging company was available to villagers, four trade stores opened, and there was a regular bus service to town. The Aid post and the school were also built, and building materials such as corrugated iron for roofs and water tanks were brought in by helicopter.

Krisa is now at a 'post-development' stage. The legacies of the non-completed logging operation include ever-dwindling royalties, a much degraded forest, and the aforementioned structures, most of which have now fallen into disrepair. At the time of our visits (early 2000), no trade stores were operating and the road was no longer passable by motor vehicles (although rumours of imminent logging company or government-funded reconstruction abound). The loss of the road is a bitter pill to the Krisa people, and they see its dilapidation as an example of the external authorities' uncaring attitude towards their well-being. (For discussion of the road's significance and the Krisa people's attitude towards 'development' see Klappa 1999d; Kocher Schmid et al. 2000.)

A significant phenomenon over the past few years has been the intermittent scrutiny Krisa has been under as one of the multidisciplinary research sites for the Future of Tropical Rainforest Peoples FTRP, also known as L'Avenir des Peuples des Forêts Tropicales, or APFT),¹ a group funded by the European Union. A research house was constructed in the late 1990s, and this was occupied for over a year by anthropologist/botanist Stefanie Klappa, who carried out (among other research) a detailed ethnobotanical study of the Krisa area.

¹ For more information, visit the website at <http://lucy.ukc.ac.uk/Rainforest/>.

Anthropological interest has also focused on a ‘millennial ideology’ that apparently flourished in Krisa (as elsewhere in the world) as the year 2000 approached (see Kocher Schmid & Klappa 1999, and Klappa 1999c). The relationship between these researchers and the village is ongoing. Although the current material is focussed on linguistic data and not anthropological theory, in the minds of the Krisa people it represents just the latest in a long line of note-taking on essentially the same topic. In our experience it is usual that, in northern New Guinea, any anthropological or linguistic work with a people group is usually described by the subjects of that research as involving a researcher coming to ‘learn the local language’, and any approved of and successful researcher will be described as having ‘learnt the local language well’.² Clearly, language consciousness is *the* measure of cultural worth in this part of the world.

1.3 Languages

The only language indigenous to Krisa is I'saka, and there are no other traditional villages where this is spoken. Despite this, I'saka is not the only language used in Krisa. The languages spoken in Krisa at the turn of the century include the local (indigenous) language I'saka,³ Tok Pisin and, to some degree, English. The linguistic relationship of I'saka can be seen in Figure 3. I'saka is distantly related to the neighbouring coastal Skou languages (see Figure 4), and related at roughly the same level to the Serra Hills languages and those of the Piore River group (see §9 for a summary of some evidence supporting this relationship). There is some evidence to suggest that the eccentricity of I'saka reflects retentions from an earlier stage (possibly when linked to the Lakes Plains languages (Clouse 1997) with which I'saka and the other Macro-Skou languages show many typological similarities), while the other Macro-Skou languages show innovations.

I'saka is unrelated to Mbo, also known as Kilmeri, the northern language of the Pual basin spoken around Ossima, with which group most commerce takes place, or Ningera, the variety of Bo spoken at the mouth of the Pual river, and whose speakers share many hunting grounds with the people of Krisa, and Fakmo (Bewani), the closely related language spoken to the south of the Pual and upriver. I'saka is also spoken in various settlement camps, the largest of which is Pasi.

² In Stefanie's case, one person told us that she had learnt all the local languages of Sandaun province, which would have been quite a feat, given that there are about 100.

³ I'saka is the local name for the language, the people, and the village itself. The name Krisa is purported to be derived from the name of a patrol officer (Chris) of the 1930s. We will continue to use I'saka for the language and Krisa for the place, following the usual practice of I'saka speakers. See also §2.6.1.

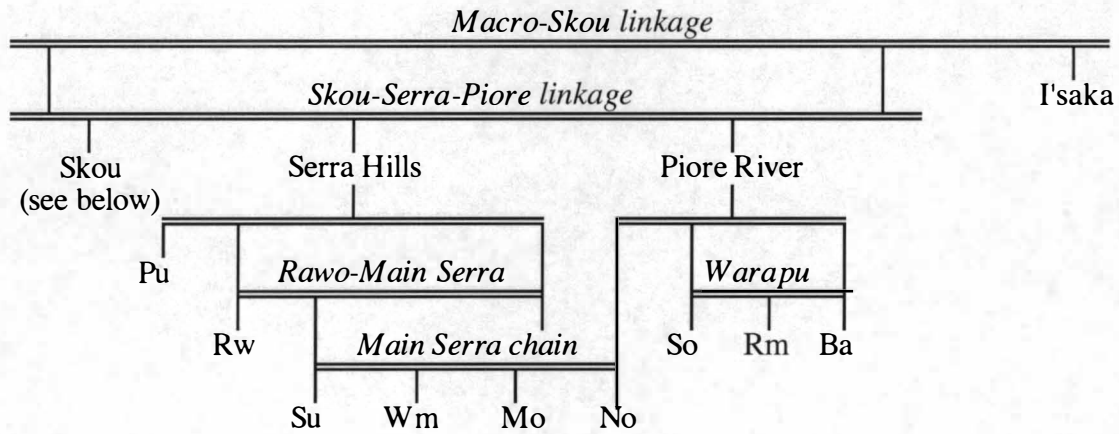
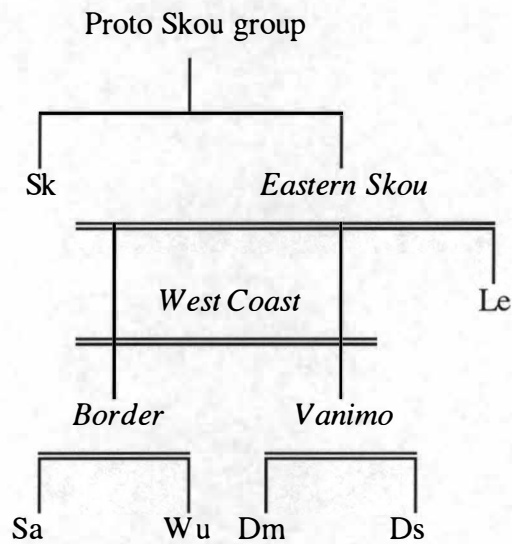


Figure 3: The Macro-Skou family

Conventions in these tables follow Ross (1988), with *italics* and double underlines () representing linkages, where there are no clear language boundaries, and normal font names showing separate languages. Vertical lines indicate genetic relationships. Nouri is a language that was originally the western-most member of the Piore River family, which under strong pressure from the adjacent Serra Hills languages has moved so far in their direction that it is now appropriate to refer to it as a mixed language.



Language codes:

Ba	Barupu	No	Nouri	Sk	Skou
Dm	Dumo	Pu	Puare	So	Sumo
Ds	Dusur	Rm	Ramo	Su	Sumararu
Le	Leitre	Rw	Rawo	Wm	Womo
Mo	Mori	Sa	Sangke	Wu	Wutung

Figure 4: The (smaller) Skou family

As can be seen in Figure 3, although I'saka shows a genetic relationship with the neighbouring Skou languages, it is a very distant one, in terms of structural diversity roughly on the order of the differences and similarities that can be found between Russian and English. (Examples of some of the cognates that have led to the establishment of I'saka's position within the Macro-Skou family can be found in §9.) The people in Krisa have an oral tradition of having previously lived along a string of ridges that run south of their current plateau home down to the Pual river valley, and before that further to the west in the valley itself. It is likely that this tradition of previous occupancies accurately represents the history of the Krisa people as they were forced into the more marginal hill areas when the Mbo and Ningera people advanced down the Pual valley, displacing both the ancestors of the Krisa people and the ancestors of the speakers of Skou-Serra-Piore linkage language (Donohue & Crowther 2000; see also Donohue 2002a).

1.3.1 *Language use*

Of the three languages found in Krisa village, Tok Pisin is the most commonly used, for people of all ages and social positions. I'saka is not for most people the normal medium of communication, although people nearly always seem to enjoy discussing and teaching the language. English is spoken by few villagers whose schooling and position in the village government requires it, and it is used only with the occasional non-Tok Pisin speaking outsider.

I'saka is no longer being widely learnt as a first language, although the extent of this decline, as opposed to diglossia, is difficult to ascertain, as it seems that children's passive knowledge of the language greatly exceeds their active capabilities. It is possible that people do not really start to speak I'saka themselves until they reach adulthood, a pattern of local language usage that has been reported elsewhere on the north-west coast of New Guinea (Donohue 1999a).

Of the adults, only a few use I'saka as their main means of communication. Groups of older women are sometimes heard conversing solely in I'saka, but for the most part Tok Pisin holds sway in conversation between speakers of all age groups. Among the younger adults, use of I'saka is usually restricted to inserting I'saka vocabulary items into Tok Pisin sentences. This is common linguistic practice among most of the villagers, and probably represents the future of the I'saka language: fluent young speakers are rare, though in town (Vanim) I'saka is the language of solidarity between speakers, even if they are only partial speakers.

The use of Tok Pisin vocabulary in I'saka sentences is also common, particularly with verbs. In these instances, Tok Pisin words are usually employed as specifiers for the 'light' verb *-ei* 'do' (see §5.3.1). For example, a common way of expressing the concept 'write' in I'saka is to use the Tok Pisin verb *raitim*, 'write' combined with the inflected form of the I'saka verb 'do'. Thus, 'I write' would be expressed as *raitim d-ei* ('write I-do').

In addition to dominating the private sphere, Tok Pisin is the public language of the village. Meetings, school and church are all conducted almost entirely in Tok Pisin. However, we observed that in the middle of important village occasions, such as the Easter Weekend bonfire, some announcements would also be made in I'saka. This was despite the fact that the occasion was attended by a non-Krisa priest from the Diocese. Such use is a means of establishing ethnolinguistic solidarity (see also §1.3.2, below).

Similarly in sports events such as soccer matches, where Krisa is pitted against another village, people would call out encouragement to their team in I'saka as well as Tok Pisin. (The names of the sports teams are also taken from the I'saka language.) We were not privy to any traditional ceremonies or celebrations, and so do not know which language is used on these occasions.

1.3.2 Language attitudes

There is a definite sense of endangerment in Krisa, with older people in particular expressing distress at the perceived loss of the I'saka language. Simon Tapi, the head of one of the seven Krisa clans and also an important church leader, described the situation in the following terms (this conversation was largely in English; phrases in italics have been translated from Tok Pisin):

Some people, they don't pronounce the wording [of I'saka] correctly, they twist the wording – so you have to be careful of that. Some young people don't speak dialect very often, that's why. *I'll say this [a story] in local language again*, the way it is supposed to be spoken, *how will I say*, like our great ancestors and our parents. [...]

In church, I don't talk in local language, I use Tok Pisin. That's where we are wrong there. *In church*, if Krisa people, then we can speak dialect straight away, quickly. But there are some people from other places, other villages, that's why we don't speak dialect usually, usually no. *Krisa people would understand though.* Some of these young people too they don't speak dialect. That's one of the problems here.

It can be seen from the above that Simon Tapi identifies one of the main causes of language loss as the presence of non-Krisa people in the village. It is certainly true that Krisa men are known to marry non-Krisa women. These people tend to attain only a passive knowledge of I'saka, and speak Tok Pisin with their children and in-laws. In discussing the issue of language loss, many people also mentioned the use of Tok Pisin in the village school as a factor contributing to I'saka's deterioration (see also Mühlhäusler 1996).

It is interesting that this quote reveals that Simon Tapi cannot quite decide whether the language is in trouble or not. On the one hand, he maintains that everyone could speak I'saka at public events if there were no non-Krisa people present. However he also notes that 'some young people don't speak dialect'. This is quite representative of people's feeling towards the linguistic situation: they find plenty of occasions to lament people's ignorance of the language, but are simultaneously reluctant to deny I'saka resilience and vitality.

In the quote above Simon Tapi speaks of I'saka as the language of their 'great ancestors'. A sense of pride in the history of the I'saka language is shared by both adults and young people. Krisa people are also proud to inform strangers that their language is wholly different from those spoken in neighbouring villages. There is an I'saka saying, *I kaipa, wei kaipa* ('one village, one language'), seemingly known by all age-groups, that clearly reflects Krisa people's awareness of their linguistic uniqueness, and the importance that they attach to this distinction.

This sense of uniqueness has been greatly encouraged by the presence of international FTRP researchers in Krisa over the last few years of the 1990s. This clearly proves to the villagers that their language and culture are out of the ordinary, not just in the local area but in the whole world, and worthy of special attention. (See Kocher Schmid and Klappa (1999)

for a description of one Krisa individual's incorporation of the recent presence of foreign research interest and presence into his millennial ideology.)

All these factors combine to indicate that I'saka is in some senses the prestige language of the village, in the sense that it is recognised as special. Within the village, English is not a major influence, and Tok Pisin is merely common. I'saka, however, is the province of the community authorities (that is, the older people), and is proof of birthright to the country. This adds to younger people's reluctance to speak the language as it is clearly not a trivial matter, and they are leaving themselves open to fierce censure if they make mistakes. This reluctance should not, however, be thought of as stemming from a lack of esteem for their (grand)mother tongue.

1.3.3 Previous work on the language

The I'saka language has been referred to in the linguistic and anthropological literature as 'Krisa', following the name of the village. Reference to the language in print is limited; only Laycock (1973, 1975) mentions the language, where it is reported to have 347 speakers.

The only previous linguistic work on I'saka is found in Laycock's 1970 notes on 'Krisa' and other languages of the East and West Sepik districts. While none of the linguistic data from Krisa were ever to be published, the materials in his notebooks show that he was definitely dealing with the same language as the one described here. Lexically there is no difference between the speech variety that he has recorded and the one described here. He noted (1970:340) that the language was tonal, with pitch contours occasionally noted, and four different patterns differentiated, roughly [-], [-], ['], and [\], probably reflecting the same four tones that we have heard, low, high, rising and falling. (Curiously though, he later (1975:851) wrote that 'Krisa and Rawo may have two tones only'. Rawo actually has five contrastive tones.) (See §2.2.1 for the tonology of I'saka.) In most cases where we have found nasalisation, Laycock too has transcribed nasalisation on vowels, though occasionally he shows more nasalisation than we have attested, with prenasalisation on following stops that we have only rarely heard. An example of this is his sentence <nana ndau dey> 'Mi kam slip' for our *Nana d-au d-iy* /dādā d-aw d-ij/, [nana daw dəj] 'I'm coming to sleep.' His data shows the same set of verbal inflections (though he did not spot the allomorphy between the oral and nasal stops). Laycock (1975:388) lists the verb inflections as being those shown below in (1); these are completely compatible with the inflections that we shall see, discussed in §5.2.2 and §8, and shown here as (1)'.

(1)	<i>n-</i>	<i>si-</i>	<i>di-</i>	(1)'	<i>d-</i>	<i>s(i)-</i>	<i>di-</i>
	<i>m-</i>	<i>sa-</i>	<i>yi-</i>		<i>b-</i>	<i>s-</i>	<i>yi-</i>
	<i>k-</i>	<i>sa-</i>	<i>a-</i>		<i>k-</i>	<i>s-</i>	<i>e/∅</i>
	<i>w-</i>				<i>w-/t-</i>		

The intervocalic allophone of /d/, which we have heard as [l] is listed as both <l> and <r> in Laycock's notes. The alternation between [ɛ] and [a] that we have observed in some pronouns is evidenced in free nouns as well in Laycock's notes, where we can find <duwa> for our *duwe* 'dog', and <siya?> for our *sie* 'two', and also in the 3PL inflection on verbs, as can be seen in (1) above. The intervocalic allophone of /k/ that we transcribe as [VʃV], [ʃV:] or [V:] (see §2.3.3) is described by Laycock as a '~~velaric click~~ [sic]; glottalised?; implosive?', showing his trouble with the sound and its phonetic characterisation. In his

notebooks it is often transcribed with the IPA symbol for creak, a tilde below the segment with creak, combined with a velar stop, thus [k̰], as in the following examples: <so̰kɔy> ‘tobacco’, <ñ̃o̰kei> ‘eye’. At variance with our materials, Laycock even records what is presumably this allophone word-initially in <ko̰w> ‘cloud’, though from our data this would be expected only if the token occurred *phrase*-medially.

With the differences noted above, Laycock’s materials are compatible with the analysis that we present here, although there is not as much detail.

1.4 Literacy and formal education

There is a clear community desire for some formalisation of the local language to make it a ‘rival’ to Tok Pisin and English, the languages that are given legitimacy through their use in the school system. This section describes some aspects of language and literacy in Krisa.

1.4.1 Acquiring literacy

The village school in Krisa has three or four grades running at any one time (selected from Prep 1, Prep 2, and Grades 1–6), and teaches children from about age seven or eight to the early teens. The actual school grades taught change from year to year, keeping pace with the enrolled children and restricted by the number of teachers. (For example, one year they will have grades 1, 3 and 5, the next year 2, 4 and 6). For schooling beyond Grade 6, children must leave the village and go to a high school or vocational college. In truth, it is difficult to define exactly how things are ‘organised’, but most children go to school some of the time, and the school is certainly an important focus of community life.

Currently, children are first taught first literacy in Tok Pisin, and this shifts to English in the second or third year of schooling. Neither the English language nor the English orthography are actually ‘mastered’ at the village school. The teachers themselves, although they are presumably quite familiar with written English, do not speak the language comfortably or fluently. This is a confusing but quite common pedagogic situation in PNG. Conversely, the Tok Pisin orthography is mastered within the village itself. Additionally, quite a few children make frequent trips to Vanimo with their family, and so are exposed to the more print-dependent town world.

1.4.2 Adult literacy

A school has been operating in Krisa since the 1950s (Kocher Schmid 1999) and the majority of the adult population is literate, to varying degrees. The literacy spectrum ranges from some of the older villagers, who find writing their names an extremely challenging task, to the handful of adults who must use literacy skills frequently in their employment or in legal and business concerns.

When adults have occasion to write, they usually write in Tok Pisin. However it is hard to define the role literacy has in intra-village life, as few tasks demand it. Like the English language, it is something that is more to do with negotiating the outside world (in the form, for example, of logging royalty contracts and land claims). Newspapers that find their way to Krisa are less likely to be read than rolled around tobacco and smoked.

Printed material available in Krisa is in Tok Pisin and English. This includes such items as newspapers, church-related texts, goods packaging, schoolbooks, and health information such as educational posters. Written Indonesian may also be found occasionally, having travelled across the border from Papua.

1.4.3 Vernacular literacy

There is very little material available in the I'saka language. Writing the I'saka language has very much been a matter of individual choice. As far as we are aware, there have been only a few attempts by villagers to write their language, although Stefanie Klappa stirred speaker interest in this area. Most people were reasonably keen to try writing I'saka when asked, and one proved to be a prolific writer, producing pages of sentences and lists of plants and animals. These were written with an idiosyncratic and unsystematic adaptation of the Tok Pisin orthography, with no systematic indication of nasalisation or tone. This served the author quite well to write with, but sometimes required a lot of effort to decode (read), even for the writer himself. The current I'saka orthography is discussed in §2.7.

Adult responses to the notion of a vernacular literacy program within the village school were unfailingly positive, with varying degrees of enthusiasm. The teachers were pleased at the thought of a suitable orthography and some vernacular literacy materials, as they are now officially supposed to use I'saka as a vehicle for teaching initial reading and writing skills. However, for the reasons outlined below, it is difficult to see how a vernacular literacy program for the early grades would progress.

At the time of our work, two of the three teachers at the Krisa school I'saka speaker as she has been away from the village for many years. This means that teachers of any proposed vernacular literacy programme would be attempting to instruct children in a language that would be largely unknown to themselves, and not used in day-to-day interaction by the children, a clearly problematic situation (although not unusual in Papua New Guinea). Another important factor is that many Krisa children do not use any I'saka with their families and converse solely in Tok Pisin, making the language of 'first literacy' unfamiliar to both teachers and pupils. We might expect that family language use would alter if the school were able to commence a strong I'saka-based programme, but even so it would be an uphill battle given the level of Tok Pisin use in all spheres of life.

2 *Phonology*

Krisa displays contrasts on both the segmental and suprasegmental levels, with considerable cross-influence between the systems in terms of allophonic occurrences. Although the layers of phonology show considerable interaction, we shall describe them sequentially, integrating as necessary, and then summarise the interactions at the end of this section.

2.1 Inventory: segmental

The I'saka phonological system contrasts twelve segments, made up of seven consonants and five vowels. There is some evidence that at least two contrasts which were historically present have recently been lost (the distinction between * ϕ and *p, and that between * \mathfrak{u} and *u), and that at least one contrast has only relatively recently been grammaticalised (the [t] – [s] distinction).

Perhaps the most unusual feature of the I'saka segmental inventory is the complete lack of contrastive nasal stops. The feature [nasal] plays a very significant role in I'saka, but, as we shall see, it is a suprasegmental feature, assigned to whole syllables and not to individual segments.

2.1.1 Consonants

I'saka has seven consonantal phonemes, evenly distributed between voiced and voiceless members. These segments are distributed somewhat asymmetrically, with no complete place or manner series represented in all manners or places: velar place, for instance, shows only a single (voiceless) stop, while bilabial is represented only by a voiced stop. The contrasts that we must establish are shown in Table 1; problematic contrasts are shown in brackets.

Table 1: I'saka consonants

	Bilabial	(Dento)-alveolar	Palatal	Velar
Stop: voiceless	(p)	t		k
Stop: voiced	b	d		
Fricative: voiceless	(ϕ)	s		
Glide	w		j	

As can be seen from the above table, I'saka contrasts obstruents in place of articulation, bilabial – (dento)alveolar – velar, and in voicing. Among the alveolar consonants, [continuant] is also a contrastive feature (though see §2.3.4 for the historical development of the [s] segment). A distinctive glide series is also present, differing in place of articulation (labiovelar vs palatal). Some examples of minimal or near-minimal word-initial contrasts are shown in Table 2.

Table 2: Contrasts in initial position

Bilabial		Alveolar		Velar		Glide	
/pu/-F	/bu/-L	/tu/-F	/du/-F	/su/-F	/ku/-F-N	/ju/-F-N	
'forest'	'woman'	'3SG.F come'	'sun'	'sago'	'egg'	'bird'	
/pi/-F	/bi/-F	/ti/-H	/disi/-LL	/si/-H	/kisi/-LL	/wi/-F	/jej/-F
'rain'	'bandicoot'	'fire'	'rat'	'blood'	'night'	'water'	'bow'

(Note that tone is indicated here as H (high), L (low), F (fall) or R (rise). Contrastive nasalisation on the segments of 'bird' /ju/ is represented as N; both these notations follow the transcription of segments between slashes. For more details on tone, see §2.2.1, and for nasalisation see §2.2.2.)

In word-medial position a vastly reduced range of stop consonants is present, with only place contrasting, and all manner and voicing distinctions being neutralised. See §2.3 for a discussion of the reduced contrasts available in this position. Word finally there are no stops in native words (see §2.6.1).

The phonemic status of the voiceless bilabials is problematic. The phones [p] and [ɸ] (and also occasionally [f]) are heard in non-contrastive free variation, with no discernible environmental motivation. Although we can observe some tendencies, they are not consistent enough to posit allophony. One interpretation is that there were originally two voiceless bilabial phonemes contrasting in manner of articulation, and these are currently merging, (perhaps motivated by the lack of such a contrast in Tok Pisin and neighbouring languages such as Dumo, Dusur, Ningera and Bo). Alternatively, the phones once shared an allophonic relationship that has become confused. For the sake of consistency, [p], [ɸ] and [f] will be treated as realisations of a phoneme /p/.

2.1.2 Vowels

Most I'saka speakers distinguish five vowels, shown in Table 3 below. A few older speakers also distinguish a sixth vowel, the high central rounded [ɯ], but for the majority of speakers this is no longer distinct from /u/, and even in the speech of those speakers that do produce an [ɯ], it is found in free variation with the [u], indicating that it is possibly a phoneme that has almost completely disappeared from the language.

Table 3: I'saka vowels

	front		back
high	i	(ɯ)	u
mid	ɛ		ɔ
low		a	

The only notable allophony involves optional lowering of /ε/, especially following a high front segment, to [æ], and of /ɔ/ to [ɒ] following a high back segment. There is also some slight raising of these mid vowels when they precede a glide, and dissimilation of high vowels preceding a glide of the same backness; these processes are described in §2.5.1.

Some examples of monosyllabic minimal or near-minimal vocalic contrasts are shown below:

/si/-H 'blood'	/sɛ/-F 'liver'	/sa/-F-N 'sago leaf'	/sɔ/-F-N 'coconut'	/su/-F 'sago'
/bi/-H 'bandicoot'	/bɛj/-L 'vine'	/ba/-L 'older sibling'	/bɔ/-L 'throat'	/bu/-L 'woman'

Vowel patterns in polysyllabic words can only be investigated in detail for disyllabic roots, as there are almost no examples of monomorphemic roots with three or more syllables (see §2.6). When we do look at the patterns that come up, we find that the perhaps predicted twenty-five (5 x 5) possible (C)V(C)V combinations on (monomorphemic) disyllabic words are not all attested, as seen in Table 4 (the gap for ε(C)ɔ most likely reflects a gap in the data, and not a true phonological restriction).

Table 4: Vowel patterns on disyllabic words

	i	ɛ	a	ɔ	u
i	kisi 'night'	siɛ 'two'	kia 'he'	inɔ-pa 'far'	*
ɛ	ɛsi 'carry'	ɛdɛ 'go'	ɛpa 'put, place'	[]	kɛpu '3SG.M.NOM'
a	pawi 'collarbone'	apɛ 'white man'	wasa 'blackpalm basket'	amɔ 'who'	papu 'sago scraper'
ɔ	bɔnĩ 'mother'	owɛ 'rinse'	ɔpa 'carry'	dɔpɔ 'breadfruit'	ɔbũ 'she'
u	*	duwɛ 'dog'	bua 'wife'	dũɔ 'big'	ubũ 'she'

The fact that neither i(C)u nor u(C)i occur is unusual, especially given the fact that there is a more-than-chance large number of i(C)i and u(C)u sequences. These patterns suggest that, historically at least, there have been patterns of vowel harmony operating within a root, such that high vowels in a root must all share the same values for backness. This rule does not apply to compounds in modern I'saka, as can be seen in several tree species names such as tiru (see §10.2), nor does it apply to multimorphemic roots with suffixes, such as /k-adĩ-ũ/ 3SG.M-give-3SG.NM.DAT 'he gave to her'.

In addition to the five vowels just described, and the seven consonants detailed in §2.1.1, there are two separate suprasegmental processes in I'saka, tone and nasalisation, described in the following sections.

2.2 Inventory: suprasegmental

In addition to the segmental phonological units described in the previous section there are also two suprasegmental tiers, that of tone and of nasalisation, which each apply independently to the syllable. They will be presented separately, followed by a discussion of their interaction with segmental units.

2.2.1 Tone

I'saka distinguishes four pitch contrasts on single syllables. These are a High 'H' and a Low 'L' level tone, and the contour tones Rise 'R' (decomposable into LH) and Fall 'F' (decomposable into HL). Some examples of monosyllabic minimal or near-minimal contrasts are shown below.

Table 5: Contrastive tone: (near-)minimal pairs

High	Low	Rise	Fall
/pi/ 'dust'	/pa/ 'string bag'	/paj/ 'arrow'	/pi/ 'rain'
/ta/ 'skin'	/da/ 'thorn'	/ta/ 'be at'	–
/ɛj/-N 'louse'	/wɛj/ 'butterfly'	/wɛj/ 'house'	/wɛj/ 'language'

On polysyllabic words the distinctions in tones can be very subtle. The difference between a LH and a LR is very slight, since there is a degree of assimilation in pitch between the two syllables, leading to a L having a slight rising off-glide when a following syllable contains a high pitch. Given that syllables are not strictly separated by silence, and that intervocalic consonants all lenite, which involves voicing, both a putative LH and LR will be expected to have pitch contours something like [– –] and [– /] respectively, with minimal differentiation. They can, however, be distinguished in the speech of careful speakers when they talk slowly.

The combinations that have been found on monomorphemic disyllabic roots can be seen in Table 6. It is immediately apparent that less than half the theoretically possible tone patterns (4 x 4) which might be expected on disyllabic roots are actually found. Specifically, there are no combinations involving a falling pitch on one syllable of a word, low–low is the only sequence of two identical tones found, and the sequence high–rise has not been observed.

The fact that we do not find any sequences of adjacent syllables with identical marked pitches on both syllables implies some working of the Obligatory Contour Principle, requiring that there be a change in the parameter [pitch] from one tone-bearing unit to the next. The admissibility of sequences of two low-pitched syllables in a row, rather than refuting this hypothesis, implies that, rather than being a specified tone, at least some instances of phonetic low pitch contour do in fact represent syllables that are phonologically toneless or underspecified for a tone value. The absence of a high-rise sequence is perhaps motivated by the difficulty of rising from an already high pitch to a yet higher one. The absence of a falling pitch in combination on disyllables is suggestive of a rule, either prohibiting a F adjacent to

another tonally specified syllable in the same phonological word, or else a rule of tone sandhi altering the F to another pitch contour. Since these are monomorphemic roots, and as such do not show any further interaction between their syllables, these hypotheses cannot be tested.

An alternative explanation is that tone is in fact assigned at a word level in I'saka: the disyllabic correlate of H is RH; that of L, LL; that of R is both LH and LR, and the correlate of F is both HL and RL (alternatively, and perhaps more justified, we find a new LHL melody that cannot be realised on monosyllables, but is realised over words of two or more syllables). This would then match the word-tone systems observed in the (distantly) related coastal languages Skou, Puare, Leitre (Donohue 2002a) and Barupu (Crowther 2000). The fact that the morpheme *yùng* 'bird', which has a falling tone, is heard with a low pitch in some compounds, such as [jūru] [-/] 'forest pigeon', supports the notion that the I'saka tone system is word-based, not syllable-based. In the case of the word cited, we would presume that the falling tone of *yùng* is overwritten by a rising tone associated with the bound root *rú*. See Donohue (1997) for discussion of the typology of tone systems in New Guinea. Much more data is needed before this hypothesis can be confirmed.

Table 6: Tone patterns on disyllabic words

	High	Low	Rise	Fall
High	–	/pəwɛ/ 'frog'	–	–
Low	/pawi/ 'collarbone'	/duwɛ/ 'dog'	/dākāj/ 'eye'	–
Rise	/duwɛ/ 'ground'	/babɔ/ 'sago grub'	–	–
Fall	–	–	–	–

The only trisyllabic word in our corpus that might even possibly be monomorphemic is *susuwáng* 'dragonfly', and even this is suspicious (we can note the possible reduplication of the *su* syllable, for instance). As a result of the scarcity of data on unambiguously monomorphemic words longer than two syllables, we cannot draw any conclusions about the shape of pitch contours on longer expressions. There does not appear to be any interaction between the tones of adjacent lexical items in a phrase or clause.

2.2.2 Nasalisation

As mentioned earlier, I'saka exhibits contrastive nasalisation, even though no nasal consonants or vowels have been listed in §2.1. The appearance of a nasalisation contrast is not unexpected, but the realisation of that contrast deserves special discussion for I'saka, which will be provided in this section. The contrasts shown by nasalisation can be exemplified in the minimal pairs shown in Table 7.

Table 7: Nasalisation contrasting on vowels and consonants

Oral	Nasal
[p̄aj]-R 'arrow'	[p̄ãj̄]-R 'sling'
[ej]-F 'good'	[ẽj̄]-F 'sago stem'
[bow]-R 'heart'	[mõw̄]-R 'none'

In this table we can see contrasts both in the nasalisation of vowels, and in the nasalisation of the initial consonant. This is not, however, nasalisation that is contrastive on either the onset or on the vowel, but rather contrastive at the syllable level. The contrasts shown in Table 7 above in phonetic transcription are best represented phonologically as shown in Table 8.

Table 8: Phonological representation of nasalisation contrasts

Oral	Nasal
/paj/-R 'arrow'	/paj/-R 'sling'
/ej/-F 'good'	/ej/-F 'sago stem'
/bow/-R 'heart'	/bow/-R 'none'

It can be seen that the forms in the different columns are segmentally identical at a phonological level, but differ in the application of the nasalisation prosody, which affects the whole syllable. As the voiced oral consonants /b/ and /d/ are invariably realised as the nasal stops [m] and [n] when they occur in a nasal syllable (see §2.4.1, below), nasalisation in I'saka is only truly contrastive at a syllabic rather than at a segmental level. That is, the following syllables occur, when examined from the point of view of nasalisation ('nasal onsets' are taken to be onsets which realise nasality if it is possible — i.e. if there is voicing in the onset, nasality is realised. A voiceless onset, such as /k/, cannot realise nasality, and so is judged not to be a nasal onset in a syllable that shows a degree of nasalisation).

Table 9: Types of syllables

Rhyme		
Onset	Nasal	Oral
Nasal	yes	no
Oral	no	yes

Phonetically, no syllable with a potentially nasalised onset appears with that onset not nasalised, if the syllable contains a nasal rhyme; it is impossible to have a syllable such as *[bā], for instance, or *[wī], in I'saka. Nor is nasality ever found on the onset of a syllable that has a purely oral rhyme: *[ni] or *[wū]. It is most appropriate to describe a syllable as being specified as nasal or oral, this quality then being realised wherever possible (that is, wherever voicing is present). We may represent the locus of the nasal contrast in I'saka, compared to some better-known languages, in the syllable-structure figures that follow. English contrasts nasality only on consonants, and so only on onsets and codas: the nasality of the onset has no effect on the choices available for nasality in the coda, and vice versa, as seen in the independent specification for nasality in the onset and the coda in words like *numb*, *mad*, *dumb*, and *dab*. In Japanese we can see contrastive nasalisation on the onset, or on the rhyme as a whole. A language like French contrasts nasality on the onset, the nucleus and the coda independently. In I'saka, nasality contrasts only at the syllable level.

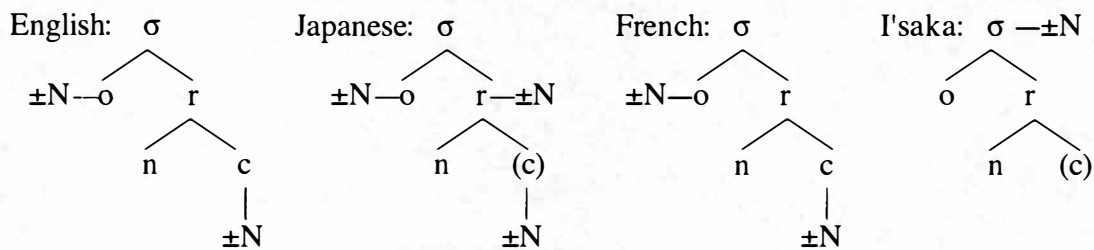


Figure 5: Syllable types and nasalisation in different languages

While unusual, systems of this type, with no systematic contrast between voiced nasal and oral stops, are reported elsewhere in New Guinea (Voorhoeve 1965; Clouse & Clouse 1993). The use of contrastive nasalisation on the nucleus is found in the area north of I'saka (Donohue & San Roque 2000).

It is worth noting that two degrees of nasalisation are clearly present phonetically. The degree of nasalisation that is found on the vowel of a nasal syllable which does not start with /b/ or /d/ is much greater than a syllable that has one of these stops as its onset. It is worth noting that these are the very stops that are realised as full nasal stops when they start a nasal syllable: following the nasal stop, the degree of nasalisation on the vowel is not consistently as strong as with a syllable that has a glide or voiceless consonant as its onset, or no onset at all. We may represent these differences with the following chart, showing weak nasalisation with a 'N', and strong nasalisation with 'NN'.

Table 10: Degrees of nasalisation on vowels

	No nasalisation	Weak nasalisation	Strong Nasalisation
Environment	non-nasal syllable	nasal syllable, following /b/, /d/	nasal syllable, following /t k φ s w j/ or zero onset
Example	/ti/ 'fire'	/baj/-N 'tongue'	/ku/-N 'tooth'
Realisation	[ti]-∅	[maj]-N	[ku]-NN
Nasalisation on vowel:	none	weak	strong

- (7) /bɛpu/ → [bɛpu], *[bɛβu]
'you'

Similarly, with the putative fossilised suffix *-pa* we do not normally observe any lenition:

- (8) /kajpa/ → [kajpa], #? [kajβa]
'one'

As noted in §2.1.1, some occurrences of /p/ are more *likely* to be continuant than others, and it seems that only a lexical stipulation can account for this. In these cases, when the phoneme is intervocalic, the alternation is between voiced and voiceless fricative, representing the lenited and non-lenited variation. The word *d-opa* 'I carry (on shoulder)', for instance, is sometimes heard with a stop, but is more likely to be heard with a fricative:

- (9) /dɔpa/ → [dɔɸa], [dɔβa], [dɔpa]
'I carry'

The lenition rule for bilabials thus represents a *tendency*, and it is certainly not incorrect for 'one' to be pronounced as [kajpa], nor is it completely unlikely that /bɛpu/ 'you' could be pronounced [bɛɸu]. The fact, however, that there are, for some older speakers at least, tendencies for some lexical items and not others to show lenition is support for the idea that the merger of Proto macro-Skou *p and *f in I'saka as /p/ is a relatively recent event, and there are still some areas in which they are treated differently, if only statistically.

2.3.2 Voiceless alveolar fricative

The voiceless alveolar fricative /s/ is occasionally realised intervocalically as a voiced fricative, [z]:

- (10) /s/ → [z] / V__V

As with the voiceless bilabial, voicing is more likely to occur within or adjacent to a nasal syllable:

- (11) /d-aNsuN/ → [nazũ]
'1SG-drink'

When not adjacent to a nasal syllable, lenition is optional:

- (12) /wisaw/ → [wisaw], [wizaw]
'forest'

Section 2.3.4 discusses the lenition, or lack thereof, of the voiceless alveolar stop, and its relation to /s/.

2.3.3 Voiceless velar

The voiceless velar stop /k/ is by far the most commonly lenited of the voiceless consonants in intervocalic position, and is realised as [k] intervocalically only in the most careful and pedantic speech:

- (13) /k/ → [ç], [ç], [ŋ] / V__V

In an intervocalic environment /k/ will be most frequently realised as the voiced velar fricative [ɣ], and occasionally as the voiced uvular and pharyngeal fricatives [ʁ] and [ʕ]. In some rapid casual speech, especially when adjacent to /a/, the segmental qualities of /k/ may disappear altogether; in these cases, the resulting nucleus is lengthened and shows strong velarisation/pharyngealisation, and occasionally even a voiced pharyngeal fricative in the onset of the combined syllable:

- (14) /daNkaj/ → [naɣaj] (also [naʁaj], [naːj], [naʕaj], [nʕaːj])
 'little'

The latter pronunciations are most frequent with the low vowel /a/ surrounding the intervocalic /k/. A word such as /tokow/ 'knee' is much more likely to be realised as [tɔyow] than as [tə:w], and never as *[tʕə:w]. It is worth noting that the language name, I'saka, is pronounced, in the light of the rules for lenition presented in this and the preceding section, as ['izʕaː] ~ ['izaʕa], and not (or, at most, rarely and only in very slow speech registers) as ['isaka].

2.3.4 Voiceless alveolar stop

The voiceless dento-alveolar stop /t/ does not occur intervocalically within monomorphemic roots. The comparatively high occurrence of intervocalic [s]/[z] (the expected outcome of /t/ leniting), and the fact that word-initial /s/ occurs most commonly as an onset to the high front vowel /i/ (a common environment for spirantisation in languages of New Guinea — see Bromley 1961; Ezard 1997; Foley 1986; Moxness 2002; Donohue 2002a) suggests that /s/ was originally an allophone of /t/. Under the scenario we are proposing, all lexically specified intervocalic occurrences of /t/ have lenited unconditionally to /s/. The hypothesised development is shown in Table 11. Occurrences of [s] before a vowel other than [i] would, at stage 2, be attributed to an underlying CG sequence: a word such as [su] 'sago tree' would be assumed to have the structure /tju/, with the high front /j/ serving as the environment to spirantise the /t/.

Table 11: Hypothesised development of the /s/ phoneme

	Initial		Medial
	before [i]	elsewhere	
Stage 1: no contrast, no allophony	[t]	[t]	[t]
Stage 2: no contrast, allophony	[s]	[t]	[s, z]
Stage 3: contrasts develop, defective distribution of /t/	[s, t]	[s, t]	[s, z]

In modern I'saka, we can no longer posit [t] and [s] as allophones of the one phoneme. The appearance of words such as [slaw] 'dry' would require us to posit */tjdaw/, an otherwise unattested triple onset. Because of the stipulativeness of this approach in the modern language, and because of the appearance of [t] before high vowels, the sounds [t] and [s] must be assigned to independent phonemes. An example of a near-minimal pair that establishes this contrast is:

- (15) [siɛ] [ti]
 'two' 'fire'

We thus do not need to posit any rule of intervocalic lenition for /t/ in contemporary I'saka. This is not because the stop does not lenite, but rather because it has already undergone a historical process by which this segment completely lenited to form a new phoneme in these positions. Complications with this analysis are discussed in §2.6.3, but it should be noted that older speakers have adapted some loans that start with the sequence [si-] to a stop, and not a fricative. For instance, the place name Singapore ['sɪŋəˌpɔː], has been heard as [tʰɪŋgəpɔl], suggesting that the connection between [s] and /t/ is not, for some speakers at least, wholly lost.

2.4 Rules affecting voiced consonants

In addition to the lenition described in the previous section, affecting voiceless consonants intervocalically, various environments, both segmental and suprasegmental, affect the realisation of the voiced stops. These are detailed in the sections that follow.

2.4.1 Nasalisation

Voiced consonants are realised as nasals when they occur as the onset of a nasal syllable.¹ This applies to both the stops and the glides:

- (16) + voice → + nasal / N

This can be illustrated with the following words:

- (17) /ba/-N → [ma] /di/-N → [ni] /ju/-N → [jũ] /wi/-N → [wĩ]
 'hot' 'sharp' 'bird' 'banana'

Nasalisation of voiced stops may also occur (with less regularity) following a nasal vowel, and this can sometimes take place across morpheme or word boundaries. For example the first person possessive pronoun /dida-N/ shows alternation between [dina] and [nina], depending on whether the final vowel in the preceding word is oral or nasal:

- (18) /su dida-N/ → [su dina] /sɔ-N dida-N/ → [sɔ̃ nina]
 sago 1SG.POSS coconut 1SG.POSS
 'my sago' 'my coconut'

The glides /j/ and /w/ are also frequently nasalised when they serve as the onset of a nasal syllable; with the palatal glide this can lead to being pronounced sporadically as a palatal nasal. There is no equivalent to this complete nasalisation with the glide /w/ as an onset – for instance, /wi/-N 'banana' is heard as [wĩ], but is never pronounced *[ŋwĩ] or *[mwĩ].

- (19) /ju/-N → [jũ], [ɲũ] /ja/-N → [jã], ([ɲã])
 'bird' 'leg'

¹ A similar analysis of Grebo has been proposed by Innes (1966), noted in Newman (1986), as well as by Bentinck (1975).

When a voiced bilabial stop is both intervocalic, the environment in which we expect lenition, and the onset of a nasal syllable, then occasionally it is realised as a nasalised bilabial fricative:

- (20) /ubu/-Ø, N → [umu], [uβu]
'she'

Note that an intervocalic /p/ is also realised as a voiced bilabial fricative [β], but is differentiated from this allophone of /b/ in that it does not occur as a nasalised fricative or a nasal stop:

- (21) /dɔpɔ/-N, N → [nɔpɔ̃], [nɔβɔ̃], *[nɔβɔ̃], *[nɔmɔ̃]
'breadfruit'

This can be distinguished from the nasalisation that is found as a result of nasal spread from an adjacent syllable (see Table 8).

2.4.2 Other allophones of /d/

The voiced dento-alveolar stop /d/ exhibits the most diverse allophony of the I'saka consonants. Nasalisation of /d/ has been described above, and the remaining rules are shown below.

- (22) + voice → + lateral / V__V
+ alveolar + sonorant / C -alveolar __
- sonorant

This rule states that the phoneme /d/ is realised as a lateral [l] in two environments: either intervocalically, or following a non-dento-alveolar consonant. We can restate the rule above in the following pair of phonetically descriptive rules:

- (23) /d/ → [l] / V__V
(24) /d/ → [l] / C[/p/, /b/, /s/] __

Examples of this rule in operation are the following:

- (25) /sudu/ → [sulu] /pɔdaj/ → [plɔj]
'where' 'bad'

The phones [d] and [l] are in complementary distribution, [d] being largely restricted to word-initial position (although see Table 16), in which [l] never appears. An interesting aside on this matter is the fact that I'saka speakers, when referring to one of the investigators, would rarely use her English name, *Lila* ['lajla], but instead decided that it must be [da'laj] or [di'laj], and referred to her with this, spelling it, on occasion, as *Delai* (see also §2.5.3 on Glide deletion). One older speaker has been heard producing [ju dukipinis] for Tok Pisin *Yu lukim pinis?* 'Have you seen it?', when speaking in that language.

Alternations between the two allophones can be observed through morphological changes brought about by reduplication (which marks irrealis mood). This morpheme specifies that the first syllable of the verb is reduplicated, following the addition of any subject agreement inflection (see the discussion of syllable and word structure in §2.6). (Some speakers, some

of the time, apply this rule before the subject prefix has been added, for some inflections. Thus in addition to *kekelei* [kɛɣɛlej] ‘he will see’, we have also sometimes heard [kelelej], showing reduplication of the first CV sequence in the verb root). Two examples are shown below in Table 12. In the first row we see the verb /ɛdɛj/ ‘see’ inflected for 3SG.M subject with the prefix /k-/. Note how in the irrealis inflection, the /k/ and its following vowel is reduplicated, with the velar stop being further lenited intervocalically, to be realised as the voiced fricative [ɣ]. Similarly, in the second example, the reduplicated /d/ is realised intervocalically as [l].

Table 12: Examples of irrealis reduplication

V-root: ‘see’	Subject prefix		<IRR>		output
/ɛdɛj/	/k -/	/kɛdɛj/	+ ke	/kɛ-kɛdɛj/	[kɛɣɛlej] ‘He’ll see’
	3SG.M	(‘he sees’)			
	/d -/	/dɛdɛj/	+ de	/dɛ-dɛdɛj/	[dɛlelej] ‘I’ll see’
	1 SG	(‘I see’)			

The voiced alveolar stop /d/ is realised as the alveolar rhotic [r] (or flap [ɹ]) following the alveolar consonant /t/, and when in an intervocalic environment that crosses a morpheme boundary (at a lower level than the word boundary) (there are no instances in our data of the sequence /ddy/, so we cannot assume that [dry] is possible).

$$(26) \quad \begin{array}{l} + \text{voice} \quad \rightarrow \quad + \text{sonorant} \quad / C_{[+dentoalveolar]} \\ + \text{alveolar} \quad \quad \quad \quad \quad \quad \quad \quad \quad / V + _V \end{array}$$

The argument for [d]/[r] allophony lies in their complementary distribution and the fact that occurrence of [r] is extremely restricted. All intervocalic occurrences of [r] lie on morpheme boundaries and otherwise it is only found after the voiceless alveolar stop [t]. It is possible, however, that this is no longer a productive phonological rule and that occurrence of [r] has become ‘fossilised’ to some extent, so that the sound change is diachronic rather than synchronic.

2.4.3 Fricativisation of initial glides

Of the glides, the palatal glide /j/ shows some allophony apart from the nasalisation that is associated with all voiced segments of a nasal syllable.

Initially, a /j/ that is part of a lexical item (that is, not prefixal to a verb) is optionally fricativised; this applies only if the syllable is not nasalised:

$$(27) \quad /j/ \rightarrow [z] \sim [ʃ] \sim [j] / \# _V$$

We can see the application of this fricativisation rule in non-nasalised environments, and its non-operation in nasalised environments, in the following minimal pair.

$$(28) \quad /ja/-\emptyset \rightarrow [ja], [za] \quad \text{but} \quad /ja/-N \rightarrow [jã], *[zã], *[ʃã] \quad (\text{but } [ɲã] - \text{ see } \S 2.4.1)$$

‘hair’ ‘leg’

This process of fricativisation is found only with the palatal glide; there is no corresponding fricative variant of /w/ (that is, no initial [β] variant).

2.5 Concerning vowels, glides and epenthesis

The most dramatic allophony found in I'saka is located in the consonantal segments, described in §2.3 and §2.4. There are still several processes of allophony that need to be described for vowels, and they are detailed in this section.

2.5.1 Allophones of the cardinal vowels

We can recognise different allophones of all the vowels when they are followed by a glide in the same syllable. In most cases these changes involve assimilatory processes: the low vowel is somewhat fronted before a front glide, and somewhat backed before a back glide, for instance. Similarly the mid vowels are raised before a glide of the same backness; thus, /ε/ + /j/, in which both segments are [-back], is realised as [ej], while /ε/ + /w/, in which the two segments have different values for [back], shows no raising.

The high vowels show the most divergent allophones, including definite dissimilation. In both cases a high vowel, when in the same rhyme as a glide with the same value for the feature [back], dissimilates away from the height and the backness features of the glide, to be realised as [ə]. Thus, /i/ + /j/ is realised as [əj]. This can be put down to a constraint against two [+high] segments in the rhyme, and this dissimilation is one strategy used to avoid such a violation.

The other way in which the constraint against two [+high] segments in the same rhyme could be violated would occur when a sequence of high vowel + glide of opposite backness were to occur. The resolution of this violation can be seen in the fact that /i/ + /w/ is realised not as [iw], but as [ju]. Here we see the avoidance of a tautosyllabic_[+high] rhyme by the reassignment of one of the segments in the rhyme to the onset of the syllable.

The different vowel allophones, as found both in relative isolation and when adjacent to glides in the same syllable, are summarised in Table 13.

Table 13: Vowel allophones

	alone	—j	—w
/i/	[i]	[əj]	[ju]
/ε/	[ε]	[ej]	[εw]
/a/	[a]	[aj]	[aw]
/ɔ/	[ɔ]	[ɔj]	[ow]
/u/	[u]	[wi]	[əw]

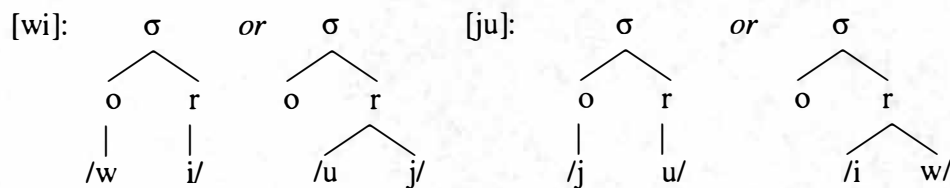


Figure 6: Tautosyllabic_[+high] rhymes and syllable structure violations

Note that under this analysis the sequences [wi] and [ju] are each two-way ambiguous in terms of their underlying structure. Both of them could be underlyingly glide + high vowel or high vowel + glide, as shown in the following representations of syllabic structures. The alternative, and sometimes heard, solution to the tautosyllabic rhyme is to split the two segments out over two syllables: the underlying vowel remains as the nucleus of its own syllable, and the coda is resyllabified as the nucleus of its own syllable. This is the case with *yùng* ‘bird’, which is underlyingly /-iw/-N-F, and which can be realised either as one syllable, [jũ] ~ [ɲũ], or as two syllables, [ĩũ]. Note that in this case the nasalisation value of the underlying root is realised over both syllables. The tone, which is a fall on the monosyllable, is realised as a high on the short first syllable followed by a fall or low on the second syllable, when split over two syllables.

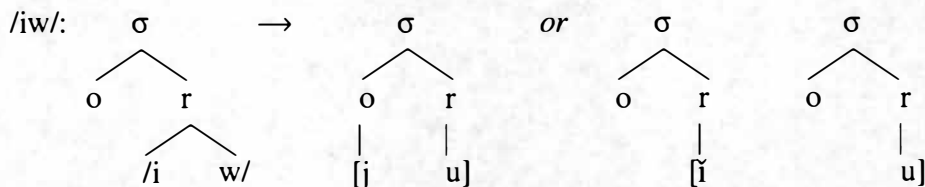


Figure 7: Ambiguities in underlying syllable structure

Similar remarks and analysis concerning syllabification also apply to the sequence /uj/, producing the optional variants [ui] or [uwi]. Note that these syllable structure representations show the phonetic syllables, pertaining after the extrametrical word-final glide has been incorporated into a syllable to allow its realisation.

2.5.2 *Glide insertion*

In addition to the phonologically specified glides described above, and the optional realisation of vowels in some tautosyllabic codas as glides, we also find epenthetic glides added to sequences of two vowels when the first vowel is high (though see the end of §2.6.1).

$$(29) \quad V_{[\alpha, +\text{high}]}V_{[-\alpha]} \rightarrow VGV$$

This has the effect of adding a palatal glide [j] to any /iV/ sequence other than /ii/, and a [w] to a /uV/ sequence other than /uu/. Examples of each of these processes are:

$$(30) \quad /du\omega/-N, \emptyset \rightarrow [nuw\omega] \quad /si\epsilon/ \rightarrow [sije]$$

‘mouth’ ‘two’

The difficulties in distinguishing a phonemic glide from an epenthetic one will be discussed in §2.6.

2.5.3 *Glide deletion*

At a surface-phonemic level we require a rule by which glides are deleted before a consonant. This rule is clearly one that can only apply in non-monomorphic environments, otherwise there would be no evidence for the existence of the glide in the first place. We may express the rule as follows:

$$(31) \quad G \rightarrow \emptyset / _C$$

Alternations are detectable when a verb shows reduplication for irrealis mood, as described in §2.4.2. The example below shows how irrealis reduplication of the syllable [now] ‘1SG-eat’ results in [nɔnow] not *[nownow]. When the root, /d-ɔw/-N, a monosyllable, is reduplicated a sequence of glide plus stop is created. The glide in the resulting first syllable is not realised, and the vowel of that first syllable is not raised, as would be expected in a diphthong environment.

$$(32) \quad \begin{array}{ccc} \begin{array}{c} \text{N} \\ | \\ /d\text{-}\text{ɔw}/ \rightarrow [\text{now}] \\ \text{'1SG -eat'} \end{array} & \begin{array}{c} \text{N} \\ | \\ /d\text{ɔw}/\langle\text{IRR}\rangle \end{array} & \begin{array}{c} \rightarrow [\text{dowdow}] \\ \\ \begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ \rightarrow [\text{dɔdow}] \\ \rightarrow [\text{nɔnow}] \quad *[\text{nownow}] \end{array} \end{array} \end{array}$$

Alternatively, one could argue that the reduplicative morpheme specifies a CV template (including, additionally, the nasality and tone specification of the root), rather than the proposed entire syllable template. If this were the case the glide would not require deletion, but would simply not be included in the reduplication template:

$$(33) \quad \begin{array}{c} /d\text{-}\text{ɔw}/\text{-N} \\ \text{CV} \end{array} \rightarrow /d\text{ɔ}\text{-}d\text{ɔw}/\text{-NN} \rightarrow [\text{nɔnow}]$$

The behaviour of reduplicated non-nasal monosyllables, however, suggests that it is the whole syllable that is being reduplicated, and that the glide is subsequently deleted so as to avoid the occurrence of a disallowed cluster (*GC). For example, reduplication on the 1SG subject-inflected verb /d-ɛj/ ‘1SG-do’ results in [dɛdɛj] not *[dɛɛj], which we would predict from the /d/ → [l] rules outlined above. The presence of the glide blocks the /d/ → [l] process, as the required environment of V_V is not present. (This analysis assumes that d-lateralisation occurs before glide deletion):

$$(34) \quad \begin{array}{c} /d\text{-}\text{ɛj}/ \\ \text{'1SG-do'} \end{array} \rightarrow [\text{dɛj}] \quad /d\text{-}\text{ɛj}/\langle\text{IRR}\rangle \rightarrow \{\text{dɛj}\text{dɛj}\} \quad (\text{d} \rightarrow \text{l} \text{ does not apply}) \\ \rightarrow [\text{dɛdɛj}]$$

The fact that nasality, a syllable-level feature, is also copied to the reduplicant (with ‘I will eat’ the grammatical output in (32) is [nɔnow], and not *[dɔnow]) suggests that at least the prosodic syllable, and not just some segmental elements of it, is copied.

An alternative account of the process of reduplication, based on a more considered analysis of word and syllable structure in I'saka, is presented in §2.6.1.

2.5.4 Schwa epenthesis

A schwa [ə] may be inserted between two dentoalveolar consonants when they form an initial cluster, particularly in slow and careful speech. The rule is shown in (35), and some examples in (36)–(37).

- (35) C_[dentoalveolar] C_[dentoalveolar] Ø CəC
- (36) /tda/ → [tra] → [tǎra]
 'sago delight' (slow speech)
- (37) /sdaw/ → [slaw] → [sǎlaw]
 'dry' (slow speech)

Note that this applies only to the /td/ and /sd/ sequences; sequences of /pd/ or /bd/ (which are realised as [pl] and [bl] respectively) are never broken up with a schwa. Thus, for instance, /pdaɟ/ 'bad' is realised as [plɔɟ], and not (or, at most, only extremely rarely) as */#[pǎlɔɟ].

2.6 Phonotactics

In the previous section we examined various automatically conditioned allophonic changes, conditioned by the immediately surrounding segments, or the result of a segment appearing in a nasal-specified syllable. In this section we shall examine restrictions on the segments, and the contrasts between segments, that may occur in syllables.

We can find a clear division in Krisa between nasal and non-nasal syllables in terms of the complexity of the segments that may appear in a syllable. Further, there is a contrast, again in terms of syllable complexity, between the initial syllable in a word (or the sole syllable of a monosyllabic root) and any subsequent syllables.

2.6.1 Segmental restrictions

Syllables may be maximally composed of a consonant cluster, a vowel, and an additional vowel or glide. Word-final syllables may be maximally composed of a consonant, vowel, and a vowel or glide. Word-initial syllables of polysyllabic words and word-medial syllables may be maximally composed of a consonant and a vowel. Syllable templates are shown below.

Monosyllabic: (C(d))V(G)

Polysyllabic: [(C)V]², (C)V, [(C)V(G)]

The only consonant clusters permitted involve a non-velar obstruent combined with the voiced dentoalveolar stop /d/, word-initially on oral monosyllables. The /d/ is realised as [r] following /t/, and as [l] elsewhere. This rule of distribution has been observed productively in loan words such as *primus* 'primus stove', which is pronounced as [plajmɪs] by older speakers. Note that the name 'Krisa' is not a possible I'saka word; folk etymology has that it is the name of the Patrol officer (Chris) who used to visit the village in the 1950s. Older speakers pronounce the word as [klisa]. Green River, a prominent town inland in the province, is similarly pronounced as [klin] ([grɪn] in Tok Pisin), and Christine, the name of an anthropologist well-respected in the area, has been heard as [k[l]ɪsɪna], showing the preference for the lateral with non-alveolar consonants, and perhaps the introduction of a new [kl] cluster into the language (assuming that these words are not code-switchings into a local variety of Tok Pisin). Some examples of attested words with these shapes are shown in (38), as well as some examples of ungrammatical potential clusters:

(38)	/bdɛ/	/pdaj/	/sdaw/	/tdɔ/	*kC	*jC	*wC
	[blɛ]	[plaj]	[slaw]	[tro]			
	'this'	'bad'	'dry'	'with'			

We may capture these restrictions on clusters with the following three constraints.

- *GC The first principle is a trivial instantiation of the principles of following a pattern of increasing sonority in a syllable: a complex onset involving a glide, *w* or *y*, followed by any non-vowel segment would violate this principle of increasing sonority.
- *CC_[-dentoalveolar] The second principle is also a reflection of this hierarchy: conceivably the sequences Cb and Ck could occur, with the lenited allophones of *b* and *k*, [β] and [ɣ], appearing: [tβV] or [tɣV], for instance. In practice this is not allowed, probably a reflection of the relative closeness of the stop and the fricative in terms of sonority. [Cr] is allowed, as the sonority difference is relatively great, but [Cɣ] is not, because there is insufficient increase.
- *VCCV This principle barring a consonant cluster in a non-initial syllable is specific to I'saka, and does not follow from phonetic naturalness; it must simply be listed.
- *CCV(σ)* The principle barring a consonant cluster in a polysyllabic word is also specific to I'saka.
- *C_[+velar]C This final principle barring a velar stop as the first member of a cluster cannot be predicted from any universalist principles.

The glides /*w*/ and /*j*/ are permitted in coda position on monosyllables or word-finally (that is, they may appear only at the right edge of a word). This means that an alternative formulation of the permitted syllable structures for words in I'saka is that shown in Figure 8, in which the word-final glide is structurally not part of a particular syllable but is an extrametrical segment in the word.

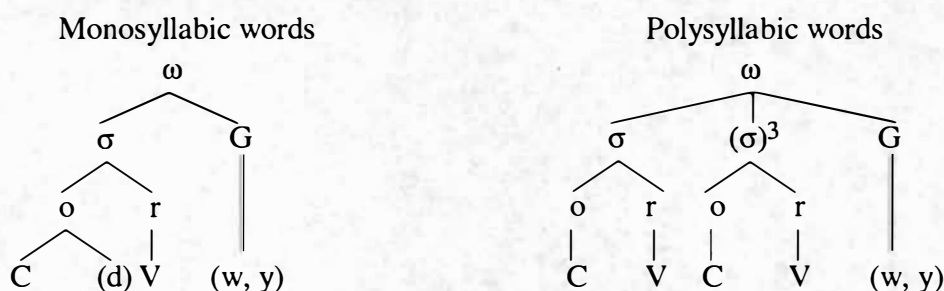
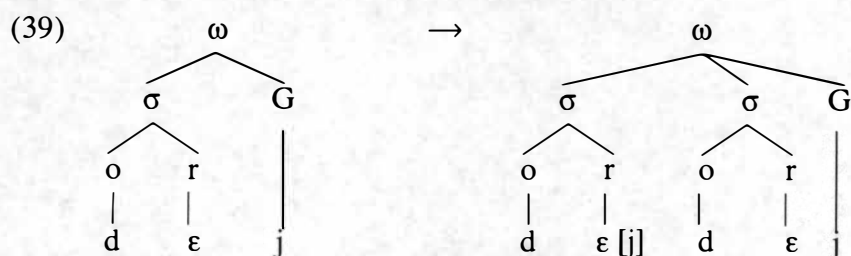


Figure 8: I'saka word and syllable structure

Under this model the reduplication of verb roots would apply to the whole syllable and any extrametrical segment associated with that syllable. The fact that these extrametrical glides cannot be realised anywhere except word-finally, however, means that the glide has no phonetic manifestation other than serving as a buffer to intervocalic lenition. The analysis of the reduplication of *dei* 'I do' is shown in (39). Here we can see that reduplication applies to

the whole phonetic syllable, which can be of the allowed shape CVG (see Table 14). In the reduplicated form, however, there is no position for the now medial glide to be realised; it blocks intervocalic lenition, but is not structurally permitted at anything other than a word-final position, and so is not realised on the word.



The reduplication of a two syllable root follows the same pattern, with the entire first phonetic syllable reduplicated (as seen in §2.4.2). The fact that it is impossible for a glide to be specified on the first syllable of a two (or more) -syllable word means that there is never a conflict about the reduplication template, though interestingly this template applies to phonetic syllables, including extrametrical material, and not to the underlyingly specified syllable.

Note that when a complex verb collocation is irrealis, it is only the second element that undergoes reduplication. In (40) we can see that of the two-verb collocation *-ana -ung* (see §5.3.3) only the second verb is reduplicated:

- (40) *Malis Mak-sa s-ana .su-su Awakali.*
 Melissa Mark-ACCOM 3DU-sit 2/3DU.be.at-<IRR> Vanimo
 'Melissa and Mark should be in Vanimo (I hope).'

Examples of words illustrating the different types of syllables and words which have been discussed in this section are shown in Table 14.

Table 14: Illustrations of word and syllable types

Length	Structure	Example		
1-σ	V	/i/-H	<i>i'</i>	'village'
	CV	/su/-F	<i>sù</i>	'sago'
	VG	/ɔw/-N-R	<i>óung</i>	'flesh'
	CVG	/baj/-N-R	<i>mái</i>	'tongue'
	CdV	/tda/	<i>tra</i>	'sago delight'
	CdVG	/sdaw/	<i>slau</i>	'dry'
	2-σ	VV	/iɛ/-LL	<i>ie</i>
VCV		/usu/-LF	<i>usù</i>	'thatching'
CVV		/bua/-LL	<i>bua</i>	'wife'
CVCV		/tadi/-LH	<i>tari'</i>	'ear'
VCVG		/ilay/-RF	<i>ílài</i>	'bandicoot'
CVGCV		/kajpa/-LL	<i>kaipa</i>	'one'
CVCVG		/wɔdɔw/-LR	<i>wolou</i>	'swamp'
3-σ	CVCVV	/kasue/-LLL	<i>kasue</i>	'cassowary'
	VCVCVG	/aluwaj/-LLR	<i>aluwái</i>	'cuscus'
	VCVCV	/aresi/-LLL	<i>aresi</i>	'tree kangaroo'
	CVCVCV	/kisukɔ/-LLL	<i>kisuko</i>	'black'

Very rarely, the segments [l] and [p] are found in coda position, and there is one instance of a final [s]. The following examples are representative of such words (some additional examples may be gathered from 10.2):

- (41) [jɔl] [babɔl] [kɔp] [suzup] [ɔpsu^wɛ]² [waws]
 'fence' 'sago grub' 'fence' 'grass' 'taro' 'prawn'

It is likely that these above examples are loan words: traditional farming methods amongst the people of Krisa village do not employ fences, and so these terms are suitable candidates for borrowing from a neighbouring language, such as Mbo, a Border language spoken in nearby Osol, a village that has moved up from the Pual basin and, along with its fenced gardens, is only a few hours walk away from Krisa. Kocher-Schmid (1999) notes that plant names are shared extensively throughout the Kilimeri cultural area, regardless of the relatedness or unrelatedness of the languages in question, and so the chance of these terms being originally loans from another language, perhaps brought in as alternants or as the names of new varieties of the plant, and then generalised, is high. Unfortunately there is little to no linguistic information available about these interior languages, so this cannot be tested in detail.

It is not entirely clear whether phonologically underlying glides (that is, segmental phonemes) are permitted as word-medial syllable onsets, or whether their occurrence in this position is a result of intervocalic epenthesis. For example, with a form such as [duwɛ] 'dog', is the underlying form /duɛ/, with an epenthetic glide, or /duwɛ/? It is noticeable that some intervocalic occurrences of the glide [w] consistently sound more like an onset than others. For example, the glide in [duwɛ] 'dog' sounds more like a 'full' consonant than that of [kasu^wɛ] 'cassowary': it is perceptibly longer, is less likely to elide in fast speech, and more likely to involve slight friction (though this is rare).

2.6.2 Suprasegmental restrictions

There are no absolute restrictions on the co-occurrence of individual segments or classes of segments with different suprasegmental features. All vowels and consonants are found with all tonal environments, and with both values of nasality. Despite this, some clear tendencies are worth noting. The high front vowel /i/ is most frequently associated with a high tone, and the low central vowel /a/ is most frequently associated with a low tone. This reflects universal correlations between vowel height and F₀ (Hombert 1978:102).

There is a constraint on the phonotactic complexity of words and the appearance of contrastive nasalisation. Nasalisation is permitted on all syllables except those containing consonant clusters; we may represent this constraint as follows:

- (42) *CCV
 ∨
 σ
 |
 nasal

² This word has also been heard with a metathesised variant [ɔjɪp(w)ɔ].

This means that a large number of otherwise potentially permissible syllables are not attested, those of the form $pd\tilde{V}(G)/$, $bd\tilde{V}(G)/$, $td\tilde{V}(G)/$ and $sd\tilde{V}(G)/$. It is suggestive about a possible earlier segmental stage of the nasalisation prosody, in which syllable-final nasals were perhaps permitted (recall that there are no unambiguous codas in modern I'saka). It might have been the case that, in a language that permitted CVGN and CCVG, the sequence CCVGN was too 'heavy', and so barred from appearing. An alternative account of this restriction is presented below.

Synchronically, we can summarise the phonotactic restrictions associated with nasality and its interaction with initial clusters in Table 15.

Table 15: Nasalisation and consonant clusters

	- Nasal	+ Nasal
#CV(G)#	[p̄aj] 'arrow'	[p̄ãj̄] 'sling'
#CCV(G)#	[pl̄aj] 'bad'	*[pl̄ãj̄]

The constraint against a complex onset in a nasalised syllable may simply reflect the fact that [l] is an allophone of /d/ in I'saka, which is realised as [n] in a nasal syllable; the resulting stop+nasal cluster is phonotactically impossible in the language, and so must be separated by a vowel, resulting in two syllables with no complex onset.

There is some historical evidence that supports this: the Proto Macro-Skou word for 'head' is reconstructable as *tlũ, attested (apart from I'saka) from evidence such as Wutung /hlũ/, Dumo /tũ/, Sumararu /l̄u/ 'head'. In I'saka the cognate word is [tanu]-LR, clearly two syllables. Only in I'saka are [l] and [n] allophones of the same phoneme, and so only in I'saka is the original cluster realised as **tn, which is then resyllabified with an intrusive vowel, to yield the modern [ta.nu]. Other possible candidates for *CIV > CalV (> /CadV/) in I'saka include *klũ 'ear', > [tari]; a possible cluster in a non-nasalised syllable that remains in I'saka is *-pl- 'near' (Skou: lalapalili), which is reflected in I'saka as [(ju)plow], with the cluster retained. Most other instances of reconstructable *Cl are reflected in Krisa as *C alone, so this hypothesis remains speculative. (Although only I'saka shows allophonic variation between stop and nasal, there is plentiful evidence pointing at sporadic cross-over between *b* and *m*, and between *l* and *n* in the other languages).

2.6.3 A note on contrasts and positions

From the material in the previous sections it can be seen that monosyllables in I'saka show the greatest number of contrasts of syllables in the language. They show a greater range of possibilities in this regard primarily because they may include a syllable-initial cluster (e.g. [pl̄aj] 'bad' compared to [p̄aj] 'arrow'), which is not possible for the syllables of polysyllabic words.

Additionally, the word-initial slot is the position in which consonantal segments are maximally distinct from each other. Word-initial onsets contrast for place and manner of articulation, as well as voicing (see examples in §2.1.1). However, in word-medial position, voice and manner distinctions are lost owing to intervocalic lenition. The sets of bilabial stops (/p ~ p̄/ and /b/), and the dentoalveolar /t/ and /s/, no longer contrast. It is possible that this has led to a reanalysis of all intervocalic occurrences of [β] and [z] as /p ~ p̄/ and /s/

respectively, and may have played a role in the establishment of /s/ as a distinct phoneme. (We can speculate that the current unmotivated fluctuation between [p] and [ɸ] is a recurrence of the same phenomenon.) Alternatively, /d/ maintains intervocalic contrast with alveolar consonants through lateralisation. Thus we see onset contrast potential reduce from ten possibilities word-initially ([p], [b], [d], [t], [s], [k], [pl] etc.) to four possibilities word-medially (bilabial, alveolar, velar, lateral).

2.7 Orthography

The segments and suprasegmental features of I'saka are written in the rest of this sketch in an orthography that matches that used in trial literacy materials in the village. It represents all phonological contrasts, though not always in the same way — that is, there is not a 1:1 correspondence between graphemes and phonological units.

The proposed I'saka orthography, which is used in all examples here, was developed by Mark Donohue and Lila San Roque, and is largely an adaptation of the Tok Pisin orthography to local phonology and preference (see San Roque 2001 for a more detailed discussion of the issues involved in the orthographies of tonal languages in New Guinea). Finding appropriate orthographic collaborators in Kriisa was difficult. It was not possible to work extensively with the school as two of the teachers were not I'saka speakers, as has already been mentioned. Older speakers (the I'saka authorities) had less developed literacy skills than were necessary (given the time available) or else were so dogmatic about their orthographic choices that it was rather risky asking their opinions. Younger people were not comfortable making decisions concerning the language, as they felt it was not their place to do so. There was thus no consistent and definitive group of Kriisa people who assisted with the orthography's development. Speaker consultation was informal and varied.

2.7.1 *Speakers' views on the graphic representation of tone*

No speaker of I'saka spontaneously expressed any prior awareness that their language was tonal. Finding an appropriate vocabulary to discuss tone (in Tok Pisin) with Kriisa people was extremely challenging, and this was never wholly resolved. Speakers would certainly innovate ways of describing the characteristics of the different tone melodies, but these were rarely consistent. At this early stage, there was no set of Tok Pisin or I'saka words or phrases that caught people's imagination to the extent that they could be satisfactorily mapped onto the tone melodies (see also §2.2). This made discussion of the tone-marking scheme rather difficult, but attempts were made to find out I'saka speakers' views on the matter.

People we discussed the orthography with were generally supportive of the tone-marking scheme, and some people (particularly the younger adults) were quite delighted with it. They felt it was important for showing 'correct pronunciation', and took the challenge of writing the tone-marks very seriously. It is possible, however, that they were simply agreeing with the tone-marks because the orthographer seemed to think they were important, and because they were novel and somewhat intriguing. Additionally, the presence of the tone-marks supported the idea that I'saka was special (since Tok Pisin and English do not use diacritics), and that writing I'saka was something out of the ordinary.

Krisa people found it more difficult to produce tone-marked text than zero-marked text, as it necessitated an extra level of decision-making about how words should be spelt. At this early stage, this tended to slow writers down, and placed a sometimes uncomfortable burden on their encoding skills. However this did not deter people from trying. The correspondences between phonological and orthographic representations are shown in Tables 16 and 17. The vowel /a/ has been chosen for exemplification of the writing for no particular reason. Table 16 shows the interaction of segmental elements with nasalisation, and the orthographic consequences of the addition of nasalisation to a syllable. In addition to these orthographic principles that we have copied from the literature that has been produced for Krisa, we have, in this grammar, written the sequence /ij/ as <iy>, to distinguish it from /ii/, and similarly /uw/ is written as <uw> rather than <uu> (note that these syllables, like the other, few, syllables with codas, are not found nasalised). This practice, writing <iy> and <uw>, is not followed in the practical orthography.

Table 16: Segmental phonemes + the representation of nasality

Phonological	Oral	Orthography	Nasal	Orthography
ta	ta	<i>ta</i>	tã	<i>tang</i>
ka	ka	<i>ka</i>	kã	<i>kang</i>
ba	ba	<i>ba</i>	m(ã)	<i>ma</i>
da	da	<i>da</i>	n(ã)	<i>na</i>
pa	ɸa/pa/fa	<i>pa</i>	ɸã/pã	<i>pang</i>
sa	sa	<i>sa</i>	sã	<i>sang</i>
wa	wa	<i>wa</i>	wã	<i>wang</i>
ja	ja	<i>ya</i>	jã	<i>yang</i>
aw	aw	<i>au</i>	ãw	<i>aung</i>
aj	aj	<i>ai</i>	ãj	<i>aing</i>
aka	aɣa, ʔa:	<i>aka</i>	ãɣã, ʔã:	<i>akang</i>
aba	aβa	<i>aba</i>	am(ã), aβ(ã)	<i>ama</i>
ada	ala	<i>ala</i>	an(ã)	<i>ana</i>
apa	aβa	<i>apa</i>	aβã	<i>apang</i>
-di†	-ri	<i>ri</i>	–	–
pda, bla, sla	pla, bla, sla	<i>pla, etc.</i>	–	–
tda	tra	<i>tra</i>	–	–
i	i	<i>i</i>	ĩ	<i>ing</i>
ε	ε	<i>e</i>	ẽ	<i>eng</i>
a	a	<i>a</i>	ã	<i>ang</i>
o	o	<i>o</i>	õ	<i>ong</i>
u	u	<i>u</i>	ũ	<i>ung</i>
εj	εj	<i>ei</i>	ẽj	<i>eing</i>
ow	ow	<i>ou</i>	õw	<i>oung</i>

† This is the instrumental marker, only found following a (vowel-final) word.

Table 17 shows the diacritics employed to mark the different pitch contours.

Table 17: Tone representation in the orthography

Phonological	Pitch contour	Orthography
H	[˥]	<i>ta'</i>
L	[˩]	<i>ta</i>
R	[˨˨]	<i>tá</i>
F	[˨˨˨]	<i>tà</i>

We can see from Table 16 and 17 that the orthography favours phonemic over-representation, as the 13 I'saka segments are represented by 17 distinct graphemes. The only interaction between the two suprasegmental levels, tone and nasalisation, occurs when a syllable is marked for both the high tone and nasalisation (with other than /b/ or /d/ as the onset). In this case logically either CV'ng or CVng' would be possible, but only the former is approved. In practice, however, no instances of such a syllable have been found — all high-tone nasal syllables occur with /b/ or /d/ in the onset. This does appear to be an unusual case of strong segmental restrictions on tonal association, involving the identity of the onset of the syllable and the tone that attaches.

Two segment-referent graphemes, <m> and <n>, (assigned to [m] and [n], allophones of /b/ and /d/ respectively) also represent the suprasegmental feature of nasalisation. As voiced stops are realised as nasals in a nasal syllable (see §2.2.2), the feature of nasalisation may be encoded on the onset segment-referent grapheme, and does not need to be reiterated elsewhere in the written word. For example, the word /di/-N 'breast' ([ni]) is written <ni>. This use of segmental graphemes to show both segmental and suprasegmental information (place from the segmental tier, and also the suprasegmental feature of nasality) is an example of an 'integrated suprasegmental representation' (San Roque 2001:10, 36).

In several cases graphemes are assigned to allophones rather than phonemes. For example the phoneme /d/ has the distinct graphic representations <d>, <r> and <l> (as well as <n>, described above), dependent on its allophonic realisation. This contrasts with the variants [p], [f] and [ɸ], which share the single grapheme <p>. The main motivation for these different strategies is compatibility with the phonic distinctions made in the Tok Pisin orthography. This is not so much an abstract 'transfer concern' as an inevitable speaker preference.

The phonic awareness of current I'saka speakers is largely derived from Tok Pisin. Being aware of the 'separateness' of the sounds [d], [l], [r] and [n] through experience of the Tok Pisin language and orthography, Krisa people were not satisfied with a single grapheme to represent all four. (See Phillips 1976:38–64, for a discussion of Tok Pisin influence on phonic awareness with reference to the Wahgi language.)

The only significant deviation from the Tok Pisin orthography is in the representation of the suprasegmentals, nasalisation and tone, neither of which are present as contrastive features in the Tok Pisin language. In the I'saka orthography, nasalisation on a syllable that does not have a voiced onset (contrasting with the examples discussed above) is represented by the digraph <ng> following the vowel, in common with the orthography of the Dumo language, spoken on the adjacent coast to the west. For example, the word [pū] (younger sister) is written <pung>. The sound correspondence of the digraph <ng> in I'saka is thus distinct from those of the identically-formed digraphs in English, in which <ng> generally represents the velar nasal [ŋ], and sometimes the same nasal and a homorganic stop, and in

Tok Pisin, in which the same grapheme, <ng>, represents the cluster [ŋg] intervocalically and the velar nasal [ŋ] in coda position.

Table 18: Uses of the grapheme <ng> in I'saka, Tok Pisin and English

	#__	V__V	__#
I'saka	n/a	n/a	Ṽ
Tok Pisin	n/a	[ŋg]	[ŋ]
English	n/a	[ŋ], [ŋg]	[ŋ]

Underlying tone is marked, and is represented with diacritics (the grave and acute accent) for the contour tones, Rise and Fall, and with punctuation (an apostrophe) for the High tone. The phonologically unmarked Low tone is also unmarked orthographically. The necessity of distinguishing graphically between High and Rise tones is arguable, as contrasts between these tones are rare. This is an important question that should be addressed if further work is done. The application of the tone-marking scheme is limited in that only lexical roots have been marked; bound affixes are not marked for tone. Tone density is approximately 35%: that is, approximately two-thirds of the syllables of lexical roots are unmarked by diacritics for tone.

3 *Word classes*

A discussion of the morphology and morphosyntax of I'saka, or any other language, must be based on the knowledge of the different categories that make up the units to which morphological or syntactic restrictions apply. In this section we shall detail the different lexical categories that must be recognised in a description of I'saka, and present the morphological and syntactic arguments for their differentiation. There are three open word classes, and a number of closed lexical classes. After an overview, the major word classes are described in the following sections, followed by a brief overview of the minor word classes, including references to where a more detailed description of their properties has been provided. The major closed word class, pronouns, receives further treatment in a unified account with the bound pronominals in Chapter 4.

3.1 Major word classes

Nouns and verbs are the two major word classes, being most obviously morphologically distinct in that verbs show agreement and nouns do not, even when predicative. This can be seen in the following pair of sentences, in which the verb *-dung* 'eat' appears with a prefix that agrees with the subject of the clause, while *tisa* in (44), a noun, shows no such prefix, nor other (more plausible) morphology which is the norm on verbs.

Verbal predicate: agreement

- (43) *Depu sù n-òu-ma.*
1SG.NOM sago 1SG-eat-2SG.DAT
'I ate your sago.'

Nominal predicate: no agreement

- (44) *Depu tisa(*-na).*
1SG.NOM teacher(-1SG.DAT)
'I'm a teacher.'

At least five further distinct classes can be distinguished. These include Adjectives, Temporals, Deictics, Clause-relevant particles and Postpositions.

The Adjective class (including quantifiers) displays elements of the morphological characteristics of both nouns and verbs. Like verbs, adjectives may encode arguments with the dative suffix. However, like nouns (and unlike verbs), they show no agreement for person, number and gender of subject or object.

Adjective predicate: optional dative agreement, no subject agreement

- (45) *Depu takau(-na).*
 1SG.NOM hot-1SG.DAT
 'I'm hot.'
- (46) *Kepu (*k(V)-)busie.*
 3SG.M.NOM 3SG.M-young
 'He's young.'

Adjectives are phonologically distinct from verbs in that they most commonly begin with consonants, not vowels. This alone would account for the lack of subject agreement on these words, but it does not explain the consistent correlation between consonant-initial non-nominal stems and property, rather than action, semantics. Additionally, adjectives (and no other word classes) may occur with a postposed intensifying particle *ni'*, as in:

- (47) *Sù èi ni'.*
 sago good INTENSE
 'It's very good sago.'

A further support to the notion that there is a categorial distinction between verbs and adjectives, and not just a phonological one, is the fact that one verb has been recorded that is consonant-initial, *wopukai* 'trick, fool, muck up', which may be used monovalently or bivalently, and if the latter may appear with dative suffixes marking the P.

- (48) *Depu wopukai-ma!*
 1SG.NOM trick-2SG.DAT
 'I fooled you!'

Temporals have scope over the whole clause, providing a time for events relative to the utterance. Only three distinct temporals have been identified: *kelie* (or, sometimes, *kelia*) 'yesterday, before today', *buru* 'today, now', and *bala* 'tomorrow, later on'. Deictics similarly exhibit three distinct forms, but the contrast encoded in the different forms is not a simple one of spatial distance. The proximal and distal deictics are opposed in space, but the third deictic has a discourse function rather than a spatial function. Three postpositions (expressing location, accompaniment and instrumental) are also found.

Five clause-final particles have been identified, and it is expected that others also exist. These cover a range of semantic and grammatical functions. Their domain includes tense/aspect/mood and negation; they have been grouped together on the basis of their common position in, and scope over, the clause.

Additionally there are several other particles and word-types that are only rarely found in our data and are poorly understood. These remain unclassified on semantic or morphological grounds, though they are listed in §3.5.

3.2 Nouns

Nouns are the most phonotactically varied of the word classes, with no restrictions on their phonological shape (unlike verbs, see §3.3). Morphologically nouns are uninflected for gender, number, or other categories, but are divided into two genders, masculine, M, and non-masculine, NM. Gender is realised only through verbal morphology, in the choice of prefix,

suffix, or suppletive stem forms of verbs. The non-masculine gender is the unmarked form, found with most animals, although some (e.g. pigs, the most culturally important and valued animal) are masculine. Natural powers such as wind and rain are predominantly masculine, with *àu* 'moon' and *(po)kisi* 'night' being expected exceptions (this conforms to the cross-linguistic data in Craig 1986). Inanimate things such as plants and features of the landscape, as well as household items, are almost exclusively non-masculine.

In addition to the pervasive, but morphologically unmarked in the NP, gender distinction there is also a division between animate referents and inanimates. This is discussed in §5.3.3, where the choice of verb of location appears to be governed by pragmatic animacy factors. There is evidence for some additional classing behaviour in I'saka, though it is no longer productive, and shows no concord anywhere in the language. We can observe, however, a more than chance series of phonological correspondences:

- nearly all birds show an initial [i] or [j];
- furry game animals show an initial [a];
- many hairless (and grammatical non-masculine) creatures, such as lizards and various water creatures, show an initial [u] or [w];
- bandicoots tend to begin with [bi].

(examples can be seen in the word lists in Chapter 10)

While this has not been thoroughly checked, there does appear to be a strong tendency in the Border languages Mnanki (and Manəm) for the names of birds to start with [i] or [j], and for water creatures and game creatures to show an initial [a], and so on. This is also possibly true in Fakmo (Bewani) as well, although in this language it is less striking (own fieldnotes, 2002–03).

The question that might be raised is whether these represent cognate forms, or borrowed forms, in the different languages. A superficial glance does not reveal many striking cognates across the languages (barring this initial phone), and there are no morphological similarities past this apparently classing phenomena. It seems that the idea of a 'shared library' of biological terms in the Pual basin, proposed by Kocher Schmid (1999) (see §2.6.1), makes a lot of sense. The idea is that the culturally distinct groups in the Pual basin area, where the people of Krisa trace their origins even though they now live above that basin on the Oenake plateau, have a common stock of labels for plants and animals, regardless of their linguistic affiliation. These classing phenomena might be evidence for the antiquity of that library, with the classes being retained in fossilised form even though the terms for the individual species are often not cognate.

3.3 Verbs

Verbs in I'saka are the most highly restricted word class in terms of their phonotactic possibilities. This can be seen in the fact that all verbal roots are unexceptionally vowel-initial, which functionally serves to accommodate the obligatory consonantal prefixation that is found on all verbs (in both finite and non-finite constructions). This means that the following possibilities are found for the segmental phonotactics on verb roots:

Table 19: Phonotactic shape of verbs

length	shape	example	
1-σ	-V	-o	'do.SG.M'
	-VG	-òung	'eat'
2-σ	-VCV	-omo	'cook'
	-VCVG	-elei	'see'
3-σ	-VCVCV	-akánu	'fill'
	-VCVV	-aliè	'flee'

Verbs can be maximally inflected for three referents (subject, object and dative) and for one mood distinction through reduplication. In addition to these compulsory inflectional categories, several other verbal morphemes have been observed, mainly encoding aspectual information, but these occur only rarely in normal speech and texts. They are described in §5.3.

Examples of verbs in use with the obligatory pronominal inflection are given in the following sentences.

(49) *Sù n-òu ya.*
sago 1SG-eat COMP
'I've eaten the sago.'

(50) *Kia k-ele' k-ung taun.*
3SG.M 3SG.M-go 3SG.M-go.down town
'He's gone to town.'

Issues in verbal morphology and syntax are dealt with in more detail in many of the following sections.

3.4 Adjectives

As mentioned above, adjectives display some of the characteristics of both nouns and verbs, but remain distinct from them morphosyntactically. A significant proportion of adjectival roots appear to be morphologically complex, bearing a (historical?) suffix *-pa* that is not observed on either nouns or verbs. The meaning of this morpheme is synchronically opaque, and it appears to be a fossilised affix of some sort. Some examples include *ino-pa* 'far away', *amo-pa* 'many', *ásong-pa* 'stealthy' and *kai-pa* 'one'; the putative roots of these words, *ino*, *amo*, *aso* and *kai*, are never found without the putative suffix *-pa*, so the meaning of this putative suffix cannot be determined. The distantly related Skou language (see §1.2, Figure 3) similarly has a disproportionate number of adjectives ending in the inseparable putative suffix *-fa*: *kúkúfa* 'quick', *háháfa* 'slow', etc. This would be a likely cognate with the I'saka *-pa* formative, suggesting that any productivity lies for the most part in the distant past of the languages.

Morphologically, adjectives (and no other word classes) may occur with a postposed intensifying particle *ni'*, as is shown in the examples below.

- (51) *Sù èi ni'*.
sago good INTENSE
'(The) sago is really good.'
- (52) *Pì k-ei nuo ni'*.
rain.M 3SG.M-do big INTENSE
'It's raining really heavily.'
- (53) **pì k-ei ni'*
rain.M 3SG.M-do INTENSE
'It's really raining.'
- (54) *Téi amopa ni' siaka lu wéi tru.*
wood many INTENSE be.at 3SG.NM.be.at house inside
'There's a lot of firewood inside the house.'

Adjectives may be combined with the dative suffix in experiential constructions, as illustrated below. In these examples, the dative suffix encodes the experiencer.

- (55) *Yóu pali-ni.*
stomach hungry-1PL.DAT
'We are hungry.'
- (56) *Ta' takau-ma?*
skin hot-2SG.DAT
'Is it (the fire) burning you?'
- (57) *Sù takau-na tuwo.*
sago hot-1SG.DAT mouth
'The sago is burning my mouth.'

It is not clear whether the dative suffix in this last example is to be interpreted as referring to the possessor, or the experiencer: 'Sago is hot in my mouth', or 'Sago is hot at me, in the mouth'. The following examples are clearer, showing unambiguously that the postverbal element serves as the initiator of the event, and that the dative suffixes mark the most affected participant:

- (58) *Dapu ubue-na.*
1SG.NOM afraid-1SG.DAT
'I'm scared.'
- (59) *Dapu ubue-na kasue.*
1SG.NOM afraid-1SG.DAT cassowary
'I'm afraid of cassowaries.'

Notice that in these sentences the experiencer is indexed by the dative suffixes, but appears in the clause in a nominative-cased pronoun.

3.5 Minor word classes

In addition to the three major, open word classes there are also several smaller, and probably closed, syntactic categories, as mentioned above. Each of them is both highly

restricted distributionally, and does not possess any bound morphology that applies exclusively to it.

3.5.1 Demonstratives

There is a simple two-way distinction in demonstratives between *blo* 'here, this' and *ble* 'there, that':

- (60) *Song ble èi, song blo plai.*
 coconut that good coconut this bad
 'That coconut's good, this one's bad.'

Elevational demonstratives ('that (higher)', 'that (lower)'), and several degrees of distance or visibility, such as have been reported in other languages of New Guinea, are not attested in the demonstrative system of I'saka.

3.5.2 Numerals

The numerical system of I'saka is not complex, being limited to only three free forms, corresponding perhaps to the three numbers (singular, dual and plural) that are found marked on verbs or differentiated in the pronominal system. Numerals are distinguished from the class of adjectives by their position in noun phrases (see §6.1.4).

Numbers higher than three can be formed by combinations of the lower numbers, and it is interesting to note that 'three' itself is often rendered as 'two plus one', rather than with the use of the dedicated numeral for 'three'. The full set of recorded numerals may be seen in the word list in §10.1 J.

3.5.3 Pronouns

The language distinguishes three numbers in its pronouns, as well as contrastive gender in the third person singular (but nowhere else). Uniquely in the language, the pronouns are marked for different cases, contrasting nominative, accusative, and possessive pronouns, as well as an unmarked set of underspecified pronouns, and various bound forms that appear on nouns, adjectives and verbs.

Because of the complexities involved in the description of pronouns, concerning not just morphology but also restrictions and requirements to do with their syntactic environments, they are not described here, but in the next chapter.

3.5.4 Epistememes

The various morphemes used to form questions also form a tacit classification of the world, according to which epistememe is appropriate to question which nominal. The different epistememes, along with examples of their use, are presented in §4.2.

The next chapter details the extensive pronominal category, in both free and bound morphological forms. In addition to this, we shall discuss the functions that the different morphological forms of free pronouns serve in syntax.

4 *Pronominal forms*

I'saka has a rich range of pronominal forms, both free and bound. There are seven pronoun sets in I'saka, comprising four types of independent personal pronouns, and three sets of bound pronouns. In this section the forms of the different pronouns will be discussed, with notes on their different functions, which will be explicated in more detail in §5.2.

4.1 Personal pronouns

The personal pronouns in I'saka distinguish first, second, third, and indeterminate (i.e. question) person, and maximally three numbers. Additionally, gender and case are found as separate categories, according to the following criteria:

- Number: Singular and Plural are distinguished on all pronouns, and Dual is a distinct number on first and second person pronouns;
- Gender: Gender (masculine or non-masculine) is marked on third singular pronouns only; it is a category only for the singular pronouns, with no distinction between masculine and non-masculine in the plural;
- Case: Amongst the singular pronouns, all but the question pronouns can be marked for nominative or accusative case, or appear in an unmarked form.

There is good evidence that the number opposition must be modelled as two features, singular versus non-singular, and plural versus non-plural, rather than having a single, three-value feature. The reason that these groupings are used is that suppletive or prefixal object marking on the verb refers to a grouping of (SG + DU) versus PL; this suggests some commonality between the singular and the dual, as opposed to the plural. Further, there are some processes that refer to SG versus (DU + PL). Standard conventions apply so that [+SG] automatically confers the value [-PL], and vice versa. By this classification dual is in a sense an unmarked category; this surprising result is reflected in the treatment of all dual numbers as showing the same consonant in subject prefixation (§5.2.2). On the other hand, underspecification means that the dual numbers are the only ones that have to bear a marked feature for both [SG] and [PL], albeit a negative value.

The gender system shows a clear marking pattern with masculine as the marked category, a category composed of animate male entities and items immediately associated with them, versus a generic 'default' non-masculine gender that is not semantically definable except as

being non-masculine. In the pronouns, masculine is marked only on the singular forms, also suggesting that masculine is more marked than non-masculine.

The formal realisation of case marking is somewhat opaque, though the formal relationship between the possessive forms and the accusative, and the appearance of a clearly segmentable formative *-pu* in the nominative, point to the fundamental difference being between the unmarked set and the accusative set; these are the only pronoun sets that do not show a derivational (albeit simply historical) relationship, or some overlap in function. The free pronouns for singular are shown in Table 20.

Table 20: Singular personal pronouns

	Unmarked	Nominative	Accusative	Possessive
1	<i>nana</i>	<i>depu</i>	<i>die</i>	<i>dina</i>
2	<i>mama</i>	<i>bepu</i>	<i>bie</i>	<i>bima</i>
3.M	<i>kia</i>	<i>kepu</i>	<i>kie</i>	<i>kikang</i>
3.NM	<i>umu</i>	<i>wepu</i>	<i>wi</i>	<i>omu</i>

The pronouns in Table 20 show the segmental phonemes which typify the persons, and which are also found in the verbal affixes to mark subject, object and dative. These are the use of /d/ for first person, /b/ for second person, /k/ for third person masculine, and /w/ or /u/ for third person non-masculine. It is also worth noting that the accusative pronouns, marked by a high vowel /i/ and (in careful speech) /ɛ/, bear a close resemblance to the human object suffixes (shown in Table 27), and probably reflect a close historical relationship. However, unlike the object-marking suffixes, the accusative pronoun always precedes the verb, and is not bound; the grammaticalisation pathway between the two forms is at best distant. There are again striking resemblances between the accusative pronouns and the possessive ones, which appear to consist of the reduced accusative plus the dative suffix (see §5.2.4). The nominative set is marked by the recurrence of the final sequence *pu*, which shows intriguing phonological similarities to the same sequence in other contexts (these include its appearance as a common adverbial ending, suggesting a common sense of ‘performance of an action’ as a component of the meaning of the [once-productive?] formative). Furthermore, the first vowel of all the nominative pronouns varies between *e* and *a*: in addition to the forms listed above, *dapu*, *bapu*, *kapu* and *wopu* (not **wapu*, showing clear influence of the initial *w*) are also heard for the nominative, from the same speakers that produce *depu*, etc. The same applies to the last vowel of the accusative pronouns: in addition to being optionally omitted, older speakers are known to use an *a* instead of *e*: *dia*, *bia*, *kia*, thus collapsing the unmarked/accusative distinction for the 3SG.M.

As mentioned above, the unmarked personal pronouns can be marked for cases. They are able to carry a case marker for accompaniment, *sa*, and function as adjuncts in clauses (see §5.1.2). Like proper names, the unmarked personal pronouns may also occasionally combine with their corresponding dative suffixes. This creates another alternative possessive pronoun.

$$(61) \quad \begin{array}{l} \text{nana} + \text{-na} \quad \rightarrow \quad \text{nanana} \\ \text{1SG} \quad \quad \text{-1SG.DAT} \quad \quad \text{1SG.POSS} \end{array}$$

The motivation behind a speaker’s choice of the nominative pronoun + dative suffix combination over the possessive pronouns is unclear, though it might be that the unmarked pronoun + dative suffix strategy is more ‘colloquial’ or ‘informal’ than the use of the

dedicated possessive pronouns. More extensive and systematic checking of texts is needed to confirm this hypothesis. Not enough data is available to draw any conclusions about the discourse conditions that motivate one strategy over another, and speakers all report that the unmarked pronoun + dative suffix strategy may replace a possessive pronoun in all contexts queried.

4.1.1 *Unmarked pronouns*

The unmarked pronoun is the most common and flexible form of the pronoun, appearing in a wider range of contexts than any of the other pronominal sets. The referent can be a subject or dative referent, and at times the unmarked set of pronouns is even used as possessive pronouns. Additionally, an overtly marked oblique pronoun must be drawn from the unmarked set (such as accompanying participants, which are marked with *tro* attached to a pronoun from the unmarked set, as in (95) in §5.1.2). The only restriction on the function of this pronominal set is that it may not be used to mark a referent which is the object of a bivalent clause.

It is not yet well understood what motivates the choice of the unmarked pronominal forms when a more highly specified, and equally suitable pronominal set is available for the function required, such as the nominative pronouns for subjects or the possessive pronouns for objects.

Examples of the use of the unmarked pronouns in different syntactic contexts appear in the sentences below.

Unmarked pronoun as subject of a bivalent clause:

- (62) *Nana trà n-òu.*
 1 SG sago.delight 1 SG-eat
 'I ate sago delight.'

Unmarked pronoun as dative referent:

- (63) *Buk n-ani-ma mama.*
 book 1 SG-give-2SG.DAT 2SG
 'I gave you the book.'

Unmarked pronoun as possessor:

- (64) [_{NP} *Nai nana*] *b-asa-ke.*
 boy 1 SG 2SG-carry-3SG.M.H.OBJ
 'You carried my child.'

Unmarked pronoun as un-indexed oblique:

- (65) *Kapu k-ele' umu.*
 3SG.M 3SG.M-go 3SG.NM
 'He went to her.'

(The meaning encoded in this sentence would be more commonly expressed with a dative suffix on the verb: *Kapu k-ele-ung* 'He went to her', *Kepu k-au-na* 'He came to me'.)

From the wide range of functions in which the unmarked set of pronouns appears it is clear that they are not specified for grammatical features other than the pronominal ones that they exist to mark.

4.1.2 Nominative pronouns

The Nominative form of the pronoun is restricted to subject referents, either in monovalent clauses or in bivalent ones. It may not be used in any other context.¹ Some simple examples of the nominative pronouns are shown below.

- (66) *Depu téi d-akai.*
1 SG.NOM wood 1 SG-cut
'I cut wood.'
- (67) *Kepu k-ele' Awakali.*
3 SG.M.NOM 3 SG.M-go Vanimó
'He's gone to Vanimó.'
- (68) **depu bepu d-elei*
1 SG.NOM 2 SG.NOM 1 SG-see
'I saw you.'

In addition to the pronominal features, the nominative pronouns are marked for the grammatical function subject, and so are incompatible with roles that do not assign this function.

4.1.3 Accusative pronouns

The accusative pronouns are restricted to representing only referents which serve as the object of a bivalent verb. The following sentences show examples of the use of the accusative in a bivalent clause, and of its ungrammaticality when used to mark an oblique (similarly, the accusative set may not be used to represent subjects, though this is not illustrated here).

- (69) *Pì bi k-ang.*
rain.M 2 SG.ACC 3 SG.M-wet
'The rain wets you.'
- (70) **die d-àu-ma*
SG.ACC 1 SG-come-2SG
'I came to you.'

The non-plural possessive pronouns clearly show a relationship (presumed to be historical) to their corresponding dative suffix (see Table 28), and to the accusative pronouns. For instance, we could analyse the 1 SG.POSS pronoun as being the accusative form of the pronoun combined with the dative suffix:

¹ This, of course, begs the question of identifying a subject; the referent of an involuntary state predicate, which is indexed on the verb with dative suffixes, may also appear in nominative case. See §5.2.4, §6.2.

- (71) *di* + *-na*
 1SG.ACC -1SG.DAT
 'my'

It is interesting to note that there is, synchronically, an alternation in the use of unmarked pronouns with or without the dative suffixes to mark possession. No such alternation with the accusative pronouns is found. The accusative pronouns are used in some emphatic contexts, such as the following example (which also shows the initial *b-* of *bima* appearing as an [m] because of the nasal syllables both preceding and following it in the clause).

- (72) *Di m-a ni, di moni' [m]ima.*
 1SG 2SG-hit PROHIB 1SG mother 2SG.POSS
 'Don't hit me, I'm your mother.'

Oddly, the first and second person accusative pronouns can be used for reference to singular or non-singular referents: *di* can just as well mean 'us' as 'me'. The third person pronouns are not so free in their scope, and the other pronouns are all 'better behaved' in terms of what they may refer to.

4.1.4 Possessive pronouns

The possessive pronouns differ from all the other pronoun sets in that they cannot function as an argument of the main verb; at best, the referent of a possessive pronoun may be indexed on the verb by dative suffixes in addition to any subcategorised-for arguments, but they cannot be used to refer to an A, S or P (or an oblique argument). Examples of the possessive pronouns are shown in the following sentences:

- (73) *Duwe dina k-àu-na.*
 dog 1SG.POSS 3SG.M-come-1SG.DAT
 'My dog came up to me.'
- (74) *Sù dina k-òung ya.*
 sago 1SG.POSS 3SG.NM-eat COMP
 'She's eaten my sago.'
- (75) *Bala d-au wéi bima.*
 tomorrow 1SG-come house 2SG.POSS
 'Tomorrow I'll come to your house.'

More details on the functions of the possessive pronouns can be found in §5.5.2.

4.1.5 Non-singular pronouns

The case distinctions of the non-singular pronouns are less developed than the singular pronouns, with not all distinctions found in the singular set being attested in the non-singular. Particularly, there is not a distinct accusative form for the non-singular pronouns, with this function most commonly being filled by pronouns from the unmarked set. Alternatively, accusative pronouns from the singular set can be used for non-singular objects, indicating that these pronouns are in fact not formally marked for number.

Table 21: Non-singular personal pronouns

		Unmarked	Nominative	Possessive
DU	1	<i>nesing</i>	<i>nesipu</i>	<i>nesing</i>
	2	<i>isang</i>	<i>isapu</i>	<i>sis</i>
	3	<i>esang</i>	<i>esapu</i>	<i>sis</i>
PL	1	<i>numu</i>	<i>dupu</i>	<i>numu</i>
	2	<i>yumu</i>	<i>yupu</i>	<i>yumu</i>
	3	<i>ie</i>	<i>epu</i>	<i>omokai</i>

The dual pronouns are clearly related to formatives added to the putative formative *si* ‘dual’, transparently related to the contemporary word *sie* ‘two’. In addition to the unmarked dual pronouns above, there are other forms of the first and second person which are composed of the singular pronominal forms (*nana* and *mama*) and the dual formative, yielding *nanasi* and *mamasi*. The unmarked forms of the first and second person plural pronouns are also used as the possessive pronominals, as shown in Table 21. As with the singular pronouns, there is considerable alternation between *a* and *e* in some of the pronouns: *nasing/nesing*, *asang/esang*, *ialie*, *nasipu/nesipu*, *apulepu*.

An example of a ‘singular’ accusative pronoun being used with plural reference is:

- (76) *Isang s-au-pa dapu bi d-elei.*
 2DU 2DU-come-SEQ 1SG.NOM 2SG.ACC 1SG-see
 ‘You two came, and then I could see you.’

The features associated with the different pronoun forms, both singular and nonsingular, are shown in Table 20 (illustrated with the unmarked pronominal set). Here we can see that the dual pronouns are more marked in terms of pronominal features than any other pronouns. This is because the singular pronouns are unspecified for any value for the feature [nonsingular] or [dual] (which is dependent on nonsingularity); the singular pronouns assume a default interpretation that they apply to singular elements since they are not as specified as the other numbers (the same argument applies to the plural pronouns with respect to the feature [dual]). The duals, on the other hand, have to be explicitly specified as being both nonsingular and dual. This system of features captures the more marked character of the dual pronouns, morphologically evidenced by the lack of distinctions in the bound pronominal forms for duals: there are often no distinctions in the subject prefixes for the dual persons, the object suffixes collapse 3DU with 3PL, and the dative suffixes do not distinguish second and third person. This system of features also predicts the unmarked nature of the ‘singular’ pronouns, evidenced by the fact that the accusative pronouns, which are composed of formatives found in the singular pronominal sets, can be used with both singular and nonsingular reference. Finally, but more stipulatively, the system also captures the fact that the feminine, rather than the masculine, is more common in the inanimate world, and so is the category with less featural marking.

Table 22: Features of the unmarked pronouns

		NON-SINGULAR	DUAL	MASCULINE
1SG	<i>nana</i>	.	.	.
2SG	<i>mama</i>	.	.	.
3SG.M	<i>kia</i>	.	.	+
3SG.NM	<i>umu</i>	.	.	.
1DU	<i>nesing</i>	+	+	.
2DU	<i>isang</i>	+	+	.
3DU	<i>esang</i>	+	+	.
1PL	<i>numu</i>	+	.	.
2PL	<i>yumu</i>	+	.	.
3PL	<i>ie</i>	+	.	.

We can also represent the matches between syntactic role and morphological form of the pronouns as follows; this table also includes the bound forms of the pronouns, which are discussed in §5.2.

Table 23: Form and function of the pronominals

	A	S	P	POSS'R	OBL
unmarked	✓	✓	✓	(✓)	✓
nominative	✓	✓	-	-	-
accusative	-	-	✓	(✓)	-
possessive	-	-	-	✓	-
SUBJ prefix	✓	✓	-	-	-
OBJ suffix	-	-	✓	-	-
DAT suffix	-	-	-	✓	✓

It is interesting to note that, while the free pronominal forms show a lot of overlap in function, at its extreme with the unmarked pronouns occurring in almost all functions, the verbal affixes are completely distinct. There is no variation in the use of verbal affixes in a given morphosyntactic construction: given the construction, the choice of the bound pronominal form is fixed. On the other hand a free pronoun, if used, can in many cases be either of two possibilities, since the unmarked pronominal set overlaps functionally with the nominative, accusative and possessive pronouns.

4.2 Interrogative pronouns

In addition to the personal pronouns listed above, which are unique in I'saka in being a non-bound word class that shows multiple distinctions for case, there is also a small set of mainly non-human interrogative pronouns. Not all of these are single morphemes, with 'when' and 'where (location)' showing the instrumental suffix *-ri* in a lexicalised and idiosyncratic usage. All the known interrogatives are listed in Table 24.

Table 24: Interrogatives

I'saka		lexical category
<i>amo</i>	who	noun
<i>kaung</i>	what	noun
<i>kaung ri</i>	when	noun
<i>sulu'</i>	where (direction)	noun
<i>ta ri</i>	where (location)	noun
<i>-(i)aka</i>	why, how, do what	inflecting verb

Two of these interrogatives must appear with the instrumental marker *-ri*; see §5.1.1 for more discussion of this morpheme. Examples of the use of these different interrogatives are given in the following sentences:

- (77) *Kelie amo b-au wéi bima?*
 yesterday who QSG-come house 2SG.POSS
 'Who came to your house yesterday?'
 (78) *Mama b-au wéi dina kaung-ri?*
 2SG 2SG-come house 1SG.POSS when-INSTR
 'When are you coming to my house?'
 (79) *B-ele' sulu'?*
 2SG-go where
 'Where are you going?'
 (80) *Wéi bima ta-ri?*
 house 2SG.POSS where-INSTR
 'Where is your house?'
 (81) *Epu aka ou?*
 3PL.NOM why do.PL.P
 'Why/How are they doing it (to them)?'

(Note that the third person plural inflection is \emptyset — see §5.2.2.)

- (82) *Bepu a b-(i)aka b-ou-na?*
 2SG.NOM pig 2SG-why 2SG-do.PL.OBJ-1SG.DAT
 'Why did you shoot my pigs?'

These interrogative pronominals function in content questions, and the pronouns referring to A, S and P, appear in a special structural position, which is described in §6.1. Interrogatives of possession ('whose?') are formed in a normal possessive construction with the interrogative *amo*:

- (83) a. *A amo ble?*
 pig who that
 'Whose pig is that?'
 b. *A dina.*
 pig 1SG.POSS
 '(It's) my pig.'

An alternative reply to this question is to simply use the possessive pronoun, or a noun in a possessive function, as a predicate: *Dina* ‘Mine’.

Questioning locations is a fraught issue in I'saka. The examples above have shown questions based around the position of an inanimate item (‘Where is your house?’), or the direction of travel (‘Where are you going?’). It is not so easy to ask where a person is. A typical question/answer sequence is one in (84):

- (84) a. *Mama amo bu?*
 2SG who woman
 ‘Where are you from?’
- b. *Nana I'saka bu.*
 1SG Krisa woman
 ‘I’m a Krisa woman.’

It is easy to see that the question is literally asking ‘Whose woman are you?’ This question, and the answer, shows the personification that is normal in I'saka when referring to villages: ‘I am Krisa’s woman’. An alternative way of questioning someone’s origins, something like ‘You are a woman of where?’, is not grammatical.

- (84)’ c. **mama tari bu?*
 2SG where woman

A similar example of the unexpected use of a construction involving *amo* ‘who’ in a questioning situation arises when questioning someone’s clan name. In this case the literal translation of the sentence is ‘Your clan’s name is who?’, as can be seen in (85).

- (85) [NP *Bulakau bima* [NP *ta' ia*]] *amo?*
 clan 2SG.POSS skin 3PL who
 ‘What’s your clan name?’

More examples of the personification of villages can be seen in the choice of locational verbs, described in §5.3.3.

5 *Morphology*

Compared to many languages of New Guinea, the level of complexity encountered in the morphology of I'saka is not great. Nonetheless, the divisions made in I'saka are intriguing and cross-linguistically unusual, especially in the area of verbal affixation. In this section we shall examine first the notional syntactic categories that can be applied to I'saka, on language-internal morphosyntactic grounds (already discussed in Chapter 3), and then discuss the morphology that is associated with each of those word classes.

5.1 Nominal Morphology

The class of nouns is not associated with any obligatory morphology, though there are several inflectional possibilities, depending on the function of the nominal in the sentence. While pronouns inflect for core cases (nominative and accusative — see §4.1) common nouns are inflected only for instrumental and accompaniment/location cases, and show dative suffixes when they serve as a predicate possessor.

5.1.1 Instrumental suffix /-di/

Nouns serving as the instrument in a clause are obligatorily inflected for the instrumental case by the use of the case marker /-di/, which is invariably realised as [ri]. (Note that this is not the usual allophone of /d/ intervocalically — we would expect (§2.4.2) to hear [l]. We can only assume that the morpheme break is here also a conditioning environment.

- (86) *D-ele' yang-ri.*
1 SG-go leg-INSTR
'I'm walking.' (lit. 'I'm going by leg.')
- (87) *Sù b-akale kaung-ri?*
sago 2SG-wrap what-INSTR
'What will you wrap the sago with?'

This case marker is an NP-level clitic: it attaches to the last word in the noun phrase, as shown in the examples below, in which the NP is of the form N POSSESSOR or N NUMERAL respectively, and the case marker follows the modifier in both cases.

- (88) *Kasue d-ei pai bima-ri.*
 cassowary.NM 1SG-do arrow 2SG.POSS-INSTR
 'I shot the cassowary with your arrow.'
- (89) *Sù n-òu yùng-kung kaipa-ri.*
 sago 1SG-eat bird-egg one-INSTR
 'I eat sago with one egg.'

Sentences with the instrumental marker attached to the head noun, but preceding a modifier, are ungrammatical, as are sentences with the instrumental marker appearing on both elements of the NP:

- (88)' **kasue dei pai ri bima, *kasue dei pai ri bima ri*
- (89)' **sù nòu yùng kung ri kaipa, *sù nòu yùng kung ri kaipa ri*

The instrumental noun phrase is an oblique, as judged by the position of the NP after the verb, and the lack of any agreement with it on the verb. Instrumentally inflected nouns can also serve as modifiers for nouns inside the NP, as in the following phrase:

- (90) *pili ape-ri*
 garden white.man-INSTR
 'non-traditional garden'

In this example the head noun *pili* 'garden' is modified by *ape* 'white man', but the modifier appears with the instrumental case. This is presumably to avoid any possible confusion with a possessive construction ('garden of a white man'), which would refer to a specific, referential garden and not to a generic category, or perhaps to show the fact that the gardens in question are a feature associated with the advent of white people in New Guinea and the introduction of new food crops, but are nonetheless the property of the indigenous people. Note that it is possible for a noun like *ape* to modify a traditional noun, such as *ape pái* 'cartridges', without the instrumental.

5.1.2 Accompaniment and location

The case markers *sa* and *tro* appear on some oblique noun phrases to more closely specify the meaning than simply general oblique, which is implied by the NP appearing in a postverbal position. *Sa* is used to show accompaniment, and *tro* can be used with this function, or to indicate a specifically interior location (within). The former, *sa*, is used only infrequently, and not accepted by some speakers; for those that do use it, *sa* appears at the start of the NP, not final. *Tro* is often omitted from speech, with the simple locative coding sufficing for its sense.

Examples of these case markers can be seen in the following phrases:

- (91) *K-ele'-le' sa Dominic.*
 3SG.M-go-RED ACCOM Dominic
 'He went with Dominic.'
- (92) *Bala d-ele'-le' Pasi Robert-tro.*
 tomorrow 1SG-go-RED Pasi Robert-ACCOM
 'Tomorrow I'm going to Pasi with Robert.'

Note that the order of the accompanier and the goal is not fixed, as can be seen by comparing the last sentence with the following:

- (93) *D-ele'-le'* *Simon-tro* *Awakali.*
 1SG-go-RED Simon-ACCOM Vanimo
 'I'm going to go to Vanimo with Simon.'

We can see in these examples that the postverbal accompaniment NP does not contribute to the set of pronominal features that are marked on the verb: in (93) the verb is marked for a singular subject, and indeed plural marking is ungrammatical in this case. If the accompanier is presented in the subject position with the affix *-sing*, from *sie* 'two', then the verb takes dual marking, as in:

- (94) *Bala* *Simon-sing* *s-ele'-le'* *Pasi.*
 tomorrow Simon-DU.ACCOM 1DU-go-RED Pasi
 'Tomorrow Simon and I are going to Pasi.'¹

Another use of *tro* is almost instrumental in function, though it is less of an 'intermediary agent' than a *-ri* marked instrument. An example of this use is:

- (95) *Ubuei* *téy* *omu-tro* *wè* *owai.*
 poison.root milk/sap 3SG.NM-ACCOM fish 3PL.die
 'Fish die because of the sap of the poisonous vine.'

(The regular form of the 3SG.NM pronoun is *umu* (see §4.1); the lowered initial vowel here might be due to the presence of the low vowel in the suffix *-tro*, or it might be a dissimilatory effect brought on by the preceding high glide in *téy*.)

Here we can see that a non-agentive effector is marked not as an A, but as an oblique cause, while the patient is marked as the S of the clause.

It is also worth noting the identity in form between the accompaniment marker *tro* and the locational noun *tro* 'inside'. Similar syncretism between *dúwe* 'ground', 'outside' can also be found (see §10.1).

5.1.3 Possession

Names (of people) and kin terms may be combined with the dative suffix (discussed under verbal morphology in §5.2.4) to mark the person as a possessor, as in the following examples:

- (96) *Duwe* *Damien-ka.*
 dog Damien-3SG.M.DAT
 '(That's) Damien's dog.'
- (97) *Nana* [_{NP} *duwe pai-ka*] *d-o* *ya.*
 1SG dog yB-3SG.M.DAT 1SG-shoot.M.OBJ COMP
 'I shot little brother's dog.'

¹ This sentence was translated into Tok Pisin as *Tumora bai* [_{NP} *mitla Simon*] *i go long Pasi*, with a very similar structure to the I'saka sentence.

In these examples *Duwe Damien-ka* functions as the predicate, and the possessor *Damien* appears with the dative suffix. Similarly, in the second sentence *pai* is marked with the dative suffixes as a possessor. When a possessor appears inside an NP modifying the head noun this use of dative suffixes is also possible, but it is more common simply to juxtapose the nouns. While both of the following phrases are possible, the first is more common and more ‘natural’ than the second.

- (98) a. *wéi Damien*
 house Damien
 ‘Damien’s house’
- b. *wéi Damien-ka*
 house Damien-3SG.M.DAT
 ‘Damien’s house’

Note that, regardless of the presence or absence of a dative suffix on the possessor, the possessor must follow the unmarked possessum.

5.2 Verbal morphology

While some morphology is unique to nominals, verbs are the locus of all obligatory morphology in I’saka, and show both the greatest range and greatest complexity of morphological forms. In this section we shall examine the inflection for person that is found on the verb, following a morpheme template for the verb.

5.2.1 Morpheme ordering

Morphemes are strictly ordered in the verb in I’saka, though the reduplicative element used to mark irrealis mood applies a template to a segmental string that includes both the root and the prefix. Section 5.7.1 discusses some variation in the order of the final morphemes in this verbal string with sentence final particles. The order of the different morphemes on the verb is as follows:

SUBJ-VROOT(.OBJ) — (Human OBJ), (EVID) — (DAT)
 (<IRR>)

Subject is obligatorily encoded either prefixally or through suppletion of the verb root, with different verb stems being used for subjects of differing number or gender. The most extreme example of this is the verb ‘do’, which uses apparently completely unrelated forms — see Table 26. Objects are encoded either suppletively (in which case they determine the vowel of the syllable reduplicated for irrealis verbs — see §2.4 and §2.5), or suffixally. It is not known whether human object suffixes are placed before or after the evident morpheme, though the semantics of the evident morpheme and the limited class of verbs that can take human object suffixes would not appear to be compatible. The dative suffix is always placed word-finally, as in the examples below, which show the dative suffix in combination with the human object suffix in (99), and the evident temporal/realis morpheme combined with the dative suffix in (100) (there is, however, some doubt as to the status of the dative suffix as suffix or as clitic: see §5.7.1).

- (99) *Nai m-opa-ke-na.*
 boy 2SG-carry.on.shoulder-3SG.M.H.OBJ-1SG.DAT
 ‘You’re carrying my son (on your shoulders).’
- (100) *Nana yoko d-epe-re-ka duwe.*
 1SG stone 1SG-put-EVID-3SG.M.DAT dog.M
 ‘I threw a stone at the dog (and hit him).’

All verbs must inflect for subject, in all syntactic environments, using the paradigm shown in §5.2.2. There is a suffix that marks object, seen in (99), but it is extremely restricted lexically, and so cannot be thought of as fully productive and is certainly not obligatory on verbs (for further details, see §5.2.3). The only other productive agreement marking on verbs is the set of dative suffixes, which index a non-core argument of varying semantic relationships and are extremely frequent. The different types of morphology are described in the sections that follow.

5.2.2 Subject inflection

All verbs (both finite and non-finite) in I'saka inflect by prefix for subject, as can be seen by the following mainly regular paradigms of the verbs *-iy* ‘sleep’ and *-dung* ‘eat’. The columns for each verb are, left to right, singular, dual and plural, with first, second, and third person rows running down each column. The final row is the 3SG.NM form, distinguished from the 3SG.M only in the singular.

- (101)
- | | | | | | |
|-------------|-------------|-------------|---------------|---------------|---------------|
| <i>d-iy</i> | <i>s-i</i> | <i>di-Ø</i> | <i>n-òu</i> | <i>s-òung</i> | <i>nì-</i> |
| <i>b-iy</i> | <i>s-iy</i> | <i>yi-Ø</i> | <i>m-òu</i> | <i>s-òung</i> | <i>yì-ng</i> |
| <i>k-iy</i> | <i>s-iy</i> | <i>Ø-iy</i> | <i>k-òung</i> | <i>s-òung</i> | <i>Ø-òung</i> |
| <i>wi</i> | | | <i>w-òung</i> | | |

Based on this data, and other verbal paradigms, we can infer the underlying prefixes that are applied to the verbs. The abstracted forms of the prefixes are shown in Table 25 below, in the same arrangement as the forms in (101). We can see that the prefixes encode person, number, and (for third person singular) gender. Singular, dual and plural number are distinguished, and in the third person singular form a distinction between masculine and non-masculine gender of subject is marked. Third person singular non-masculine forms are commonly irregular and suppletive, and this is also the case (to a lesser degree) with third person plural subjects. Prefixes for indeterminate subjects — that is, the agreement found on verbs for questioned subjects, as in ‘Who’s coming?’ — are identical to those used for second persons, of whatever number is appropriate (unmarkedly singular).

Table 25: I'saka subject prefixes

	Singular	Dual	Plural
1	<i>d-</i> (~ [n-])	<i>s-/si-</i>	<i>di-</i> (~ [ni-])
2	<i>b-</i> (~ [m-])	<i>s-</i>	<i>yi-</i>
3.M	<i>k-</i>	<i>s-</i>	<i>e-/Ø</i>
3.NM	<i>w-/t-</i>		

The high front vowel *i* present in the Dual and Plural prefixes tends to overwrite the first vowel of the verb root. If the first vowel of the verb root is nasal, prefixal oral voiced stops are realised as nasal stops. Thus the 2SG prefix, for example, shows root-governed alternation between [b-] and [m-].

Subject-inflected examples of the verbs *-ele* 'go' and *-ðung* 'eat' are shown below. In the first case there is no exceptional allomorphy involved, whereas in the second we can see the nasal allophone of /d/ appearing as a result of the nasalisation on the first (and only) syllable of the verb root. When the verb root does not start with a nasalised vowel, the prefix does not take the nasal allomorph:

(102) *S-*ele*' sulu'?*
2DU-go where
'Where are you two going?'

(103) *Wesie n-ðu.*
tulip 1SG-eat
'I ate tulip.'

(104) *Di b-elei a?*
1SG.ACC 2SG-see Q
'Are you looking at me?'

When a prefix with its own vowel is added to a (necessarily vowel-initial) verb root, the vowels coalesce, the first vowel being preserved and the second vowel (actually the whole syllable rhyme) not being realised. For example, in (105) the same verb root as in (103) (*-ðung* 'eat', phonologically a diphthong with nasalisation and a falling tone, thus /ɔw/-N-F) is in effect realised only as its suprasegmental features, nasalisation and falling tone. This is because the verb root lacks a consonantal component, and the segmental vocalic component is overwritten by the vowel of the plural prefix.

(105) *Sù nì.*
sago 1PL:eat
'We ate sago.'

The morphological process underlying this verb form is shown in (106). The four stages shown here represent the fact that the prefixal material is not specified as being nasal, nor does it bear an inherent tone, despite having enough segmental material to count as a tone-bearing unit; it simply has segmental specification. When the prefix is added to the fully specified (segmentally and in both suprasegmental dimensions) verb root *-ðung* 'eat' the nasalisation and tone values of the verb spread over the whole resulting syllable, in which the rhyme of the lexically specified syllable is overwritten by the vowel included in the prefix. Finally, the nasalised allophone of the prefix-initial /d/, [n̄], is found, rather than the non-nasalised one.

(106) \emptyset N → N → N → [n̄] [↓]
| | / | | | |
/di/- + /ɔw/-F → /di-ɔw/-F → /di/-F

This evidence suggests that affixation for subject by prefix does not involve simple addition of a consonant. The prefixal material in fact overwrites any segmental material in the root as far as it can. The fact that most prefixes have consonants, and that all verb roots

are vowel-initial, means that in most cases we simply witness the addition of a C to a prespecified syllable.

We cannot treat the apparent ‘suppletion’ of the vowel as evidence that the entire syllable is overwritten, as in fact the tone and nasalisation values of the verb root are preserved; nasalisation, at least, is assigned on a syllable-by-syllable basis, and its appearance on words such as *ni* in (105) is evidence that some of the content of the original syllable is preserved.

Rather, the segmental values of the prefix overwrite those of the suffix, according to their position in the syllable’s structure. It is noteworthy that the single vowel of the prefix in the examples above, /i/, overwrites both the vowel and the glide (/ɔw/) of the verb root. This implies that the rhyme level plays a part in the phonotactic structure of I’saka words, since the rhyme of the prefix dominates the entire lexically specified rhyme of the root. In the structures below the syllabic and phonetic forms of the words are shown, after the extrametrical glide has been incorporated into the syllable, along with two possibilities that would be logical results of the combination of the two morphemes, if the rules governing their combination were not those that are in fact observed (other possibilities do, of course, exist, but are not attested).

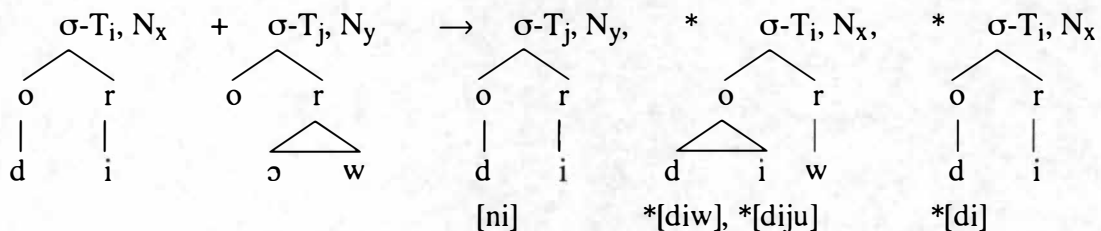


Figure 9: Assumption of rhyme features of the prefix

The inflection of verbs for dual number is in fact complicated by the fact that many verbs have 1DU forms with the prefix *s-*, not *si-*. This is assumed to be lexically stipulated, and in the cases where the dual prefix does not have an *-i-* element there is no confusion about the changing the rhyme of the verb root.

5.2.3 Object inflection

Independent bivalent verbs can be divided into two morphologically distinct classes. The first class, a minority pattern, marks the gender and number (singular/dual being relevantly grouped together as non-plural, NPL, opposed to plural, PL) of the object on the verb. This may be accomplished in one of two ways: either through the use of suppletive verb-forms, or through the use of more delimitable affixation — ‘delimitable’ in the sense that the correspondences of pronominal values to the segments employed for their encoding match the paradigms seen elsewhere. (In fact, calling this ‘affixation’ may be jumping the gun as there are too few examples known to be sure that we are really dealing with regular affixes that mean ‘masculine non-plural object’, etc., as opposed to patterns of lexical suppletion.) Table 26 shows two examples of the class of verbs that mark some value of the object by suppletive verb forms; the examples given here have been inflected for first person singular subject (*d-*) as well as the inflection for object. The first example, with the verb *-ai* ‘get’, shows what may be analysable as object affixes. The rightmost column illustrates the patterns found with the verb *-ei* ‘do’, and shows object-governed suppletion, or at best object

affixation and major morphophonological changes. Although the prevalence of suppletive forms makes it difficult to posit a root for the verb 'do', the third person non-masculine object form *-ei* is considered to be the most unmarked, in terms of its range of application, frequency of occurrence, and appearance in elicitation. As such, it has been treated as the underlying form throughout.

Table 26: Object prefixes

SUBJ	OBJ	'take, get', [-aj]	'do', [-ej]
I SG	3NPL.NM	<i>d-ai</i>	<i>d-ei</i>
	3NPL.M	<i>d-akai</i>	<i>d-o</i>
	3PL	<i>d-alai</i>	<i>d-ou</i>

If the verb 'take' in the table above illustrates a productive (or at least regular, and not entirely suppletive) object marking pattern, then the morphemes used to index the values of the object are prefixal to the verb root; the morphological structure of 'I take (masculine)' would most logically be Pref_{SUBJ}-Pref_{OBJ}-V, as in the following segmented example.

- (107) *d-ak-ai*
 I SG-3SG.NPL.M-take
 'I take (masculine)'

Here the use of the *k* consonant in the prefix is reminiscent of the appearance of this consonant in various places in paradigms involving third person singular masculine arguments. We would posit the prefixes *ak-* and *al-*, the only consonant-final morphemes in the language. With 'do', however, it is hard to isolate a single element that can be said to be added to an otherwise basically invariant verb root. It could well be the case that prefixes of the form V- and VG- are added and the rhyme of the prefix overwrites that of the verb root, in a process similar to that described for vowel coalescence when subject prefixes of the shape CV- are added to verbs (§5.2.2). If this is the case, the prefixes are *o-* '3NPL.M.OBJ' and *ou-* 'PL.OBJ' (/ɔw/). An example of the verb 'do' inflected for non-plural masculine object is given in:

- (108) [dɔ]
 /d-ɔ-ɛj/
 I SG.SUBJ-3SG.NPL.M.OBJ-do
 'I do (masculine).'

(See §5.2.2 for a discussion of the process of rhyme replacement in verbs following the syllabification of extrametrical elements, arguing that rather than simply vowel replacement, there is a more complex process involved.)

For ease of glossing, only the features 'plural' and 'masculine' will be indicated in the gloss lines, as these seem to represent elements that, historically at least, were added to the roots. Thus, *d-ei* will be glossed simply as I SG-do, not I SG-do.NPL.NM; *d-o* will be glossed as I SG-do.M, and *d-ou* as I SG-do.PL. The features non-singular and non-masculine will not be explicitly marked in the glosses, as they represent the unmarked categories.

In addition to these verbs with irregular (in the sense of *less easily segmentable*) means of marking object values on the verb, a small and semantically distinct subset of this class takes a regular set of suffixes that indicate number, person and gender of a human object (H.OBJ).

Those forms that are known are shown in Table 27, followed by some examples. It should be noted that the human object suffixes bear the same ‘signature’ person/gender phonemes (/d/:1SG, /b/:2SG, /k/:3SG.M and /w/:3SG.NM) as the subject prefixes. These onsets tend not to lenite intervocalically, implying that there are different degrees of morpheme juncture involved here, possibly involving cliticisation, compared to the lenition that occurs when subject prefixes are reduplicated (support, albeit circumstantial, for this position is the ambiguity of the position of the dative suffixes when in proximity to the completive marker – see §5.7.1).

Table 27: Human object suffixes

	SG	DU	PL
1	-de	-si	?
2	-be	-se	-ye
3.M	-ke/-ki	-i	-i
3.NM	-wi		

Examples of the use of these suffixes can be found in the following sentences; these represent examples from both of the only two verbs that have been consistently observed to occur with this set of object markers.

- (109) *M-opa-wi.*
 2SG-carry.on.shoulder-3SG.NM.H.OBJ
 ‘You carried her on your shoulders.’
- (110) *Nai d-esi d-epa-ki yang-yang.²*
 boy 1SG-carry 1SG-put-3SG.M.H.OBJ leg-leg
 ‘I’ll hold the boy on my lap.’

All observed occurrences of the human object suffixes are on verbs of carrying and holding, such as shown with *-opa* ‘carry on shoulder’ and *-epa* ‘place (on lap)’ in sentences (109) and (110), and also (not exemplified here) *-aisuso* ‘carry on side, carry on hip’ and the more generic *-asa* ‘carry’. The use of the appropriate object suffix is obligatory in those constructions exemplified above, and has not been observed, or accepted, with any other verbs. We might reasonably assume that any bivalent verb that could satisfy the semantic criteria (which we might define as ‘envelopment of an animate (human?) object’) would also combine with the suffixes, but no verbs other than those listed here have been recorded with the object suffixes. The fact that another verb of carrying, *-asei* ‘carry by attaching to a pole on shoulder’, does not allow for object suffixes implies that the envelopment part of the semantics is important.

A few examples have been noted of ‘carrying’ verbs being used in an alternative construction, in series with the verb *-ei* ‘do’, as in example (111) below. In this instance, the human object suffix is omitted. The use of an accusative object-referencing pronoun, such as *die*, is, however, obligatory.

² The verb is pronounced [depaki], and not [depayi], showing a lack of lenition of the /k/ of the object marker.

- (111) *Moni' die b-asa b-ei.*
 mother 1SG.ACC 2SG-carry 2SG-do
 'Mum, carry me!'

(Note here also the use of second person singular prefixes, consistent with a command, despite the vocative use of a [necessarily third person] nominal sentence-initially.)

It is not known what motivates a speaker's choice of one of these constructions over the other. An alternative mode of inflection for object is found productively with verbs that take an adjunct nominal, and use the dative suffixes to mark the affected experiential object.

The second class of bivalent verbs, the vast majority of verbs in the lexicon, normally shows no marking for object.

5.2.4 Argument inflection using the dative suffix

A range of non subcategorised participants are marked on the verb using the dative suffix. The fact that the nominal is peripheral can be judged by its appearance in a postverbal position, a position reserved for oblique arguments.³ Although there is a large range of possible referents, with different and non-conflicting semantic roles, only one instance of the dative suffix may appear in any one clause; the criteria for choosing which of the possible referents of the dative suffix will be chosen in the event of two or more possible candidates are not yet known, though it does seem that, while semantically not incompatible, it is unlikely from a discourse point of view that two of the possible candidates for coding will appear in the one clause.

This suffix demands an animate referent, and can be used to encode recipient, beneficiary, goal, experiencer and possessor (usually the possessor of the object of a bivalent verb). The forms of the dative suffix are shown in Table 28, and some examples of its use are reproduced below. Some forms are identical to the human object suffixes shown in Table 27.

Table 28: The dative suffix in I'saka

	SG	DU	PL
1	<i>-na</i>	<i>-si</i>	<i>-ni</i>
2	<i>-ma</i>	<i>-sa</i>	<i>-ye</i>
3.M	<i>-ka</i>	<i>-sa</i>	<i>-i</i>
3.NM	<i>-ung</i>		

The different functions of the dative suffix will be exemplified in the rest of this section, followed by a discussion of some optional appearances of the suffixes. Here we can see the use of the dative suffix with recipient, beneficiary, goal, experiencer and possessor referents. In all cases, if there is a nominal referring to the same argument that is coded on the verb with the dative suffixes it must appear postverbally.

³ An argument for treating postverbal nominals as truly oblique, and not simply obliquely coded core arguments (such as the datives of many European languages) is presented in §6.1.2.

Recipient:

- (112) *Pa n-ani-ka Mak.*
 bag 1SG-give-3SG.M.DAT Mark
 'I gave a bag to Mark.'

Encoding beneficiary:

- (113) *Kerosin d-ai-ma.*
 kerosene 1SG-get-2SG.DAT
 'I'll get some kerosene for you.'

Goal:

- (114) *Depu n-anu-ka.*
 1SG.NOM 1SG-call-3SG.M.DAT
 'I called out to him.'

(Note that a monovalent use of *-anu* 'call', with no goal, does not require a dative suffix, as in *Yùng kanu* 'The bird cried out'.)

- (115) *Nana d-àu d-elei-ma mama!*
 1SG 1SG-come 1SG-look-2SG.DAT 2SG
 'I've come to see you!'

Experiencer:

- (116) *Susup wii-na.*
 grass.NM 3SG.NM.do-1SG.DAT
 'I'm itchy from the grass.'

Possessor of participant:

- (117) *Nana a d-o-ma.*
 1SG pig.M 1SG-do.M.OBJ-2SG.DAT
 'I shot your pig.'

- (118) *Amo b-au-ma wéi?*
 who QSG-come-2SG.DAT house
 'Who's coming to your house?'

(Alternatively, this sentence might be better translated as 'Who's coming to you (at (your) house)?', in which case the dative would be construed as encoding a goal rather than a possessor.)

Note that *-ani* 'give' does not invariably occur with the dative suffixes marking the recipient. In the following example the lack of dative suffixes on the verb was explained as marking the fact that the speaker is requesting to have a flaming stick or a stick with glowing coals passed to him, but does not want to get scorched: the use of dative suffixes on the verb would imply that the fire more overtly affected the recipient, in this case adversely (by burning the hand that accepted the fire).

- (119) *Ti' m-ani-Ø.*
 fire 2SG-give
 'Give (me) some fire (to light a cigarette).'

The following examples show that inanimate arguments are not encoded by means of the dative suffixes, even when all the other conditions are met. The goal *duwe* 'dog' in (120) is

marked on the verb by the 3SG.M form of the dative suffix, but the inanimate goal *sòng* 'coconut' in (121), with an identical semantic role on the same verb, cannot be marked, as witnessed by the fact that the dative suffixes in (121)' force a reading with a possessor.

(120) *Mama yoko b-epe-ka duwe.*
 2SG stone 2SG-put-3SG.M.DAT dog.M
 'You threw a stone at the dog.'

(121) *Nana yoko d-epe sòng.*
 1SG stone 1SG-put coconut.NM
 'I threw a stone at the coconut.'

(121)' **nana yoko depeung sòng*

This sentence is ungrammatical with the *-ung* referring to the non-masculine noun *sòng* 'coconut'. It is good for: 'I threw a stone at her coconut' or 'I threw her stone at the coconut', with the *-ung* encoding the possessor of one of the non-subjects, and not the coconut itself; the point is that the dative suffixes cannot be used to index an inanimate target.

It is interesting that the P of the verb *-elei* 'see, look' is not always encoded by the dative suffix. In relatively high-transitivity instances of the verb (e.g. 'watch' as opposed to 'see'), the P is treated morphologically and syntactically as a normal object, and not as an argument that may be encoded with the oblique-marking dative suffixes.⁴ In the following examples, we see the patient-referent represented by a preverbal accusative pronoun (122), and as a noun phrase occupying the preverbal object position (123). This contrasts with the postverbal placement of the low-affect P-referent pronoun *mama* in (115) above.

(122) *Nana bi d-elei.*
 1SG 2SG.ACC 1SG-see
 'I'm watching you.'

(123) *Yùng k-elei.*
 bird 3SG.M-see
 'I'm watching the bird.'

Note that the postverbal positioning of the P of a potentially low-transitive verb such as *-elei* 'see' requires that the (nominal) referent be indexed on the verb by dative suffixes as well as appearing in this postverbal position. The ungrammaticality of a postverbal nominal not being indexed with the dative suffixes is apparent from the following pair:

(124) **k-elei yùng*
 3SG.M-see bird

(125) *K-elei-ka yùng.*
 3SG.M-see-3SG.M.DAT bird
 'He saw the bird.'

A similar contrast in transitivity can be observed with the collocation *lainim k-ei* 'teach'. In the event of a successful instruction (the pupil learned properly, to everyone's

⁴ The use of a dative-marking strategy on animate, and not inanimate, Ps is documented at length for languages of New Guinea in Foley (2000:374) and Whitehead (1981). It is also attested in languages from other parts of the world (see, for instance, Van Belle and Van Langendonck 1996).

satisfaction), the pupil can be coded preverbally, and a pronoun can be accusative. If the pupil did not take to the instruction as well as the teachers would have wished, then the pupil can be coded postverbally. The following examples were noted in spontaneous language instruction from I'saka speakers. In the first example, the pupil did end up learning to make an acceptable string bag, and so may be coded preverbally:

- (126) *Gertrude die lainim wii.*
 Gertrude 1SG.ACC teach 3SG.NM.do
 'Gertrude taught me (to make string bags).'

In this next example the pupil was not perceived as being so astute in learning, and so is coded as dative. If an independent pronoun was present it would appear postverbally, and could not be an accusative pronoun.

- (127) *Wèi lainim d-ei-ma.*
 language teach 1SG-do-2SG.DAT
 'I've been trying to teach you to speak our language.'

Note that the fact that there is an alternation between the postverbal, and datively indexed nominal in (125) and the preverbal P in (123) does not mean that the postverbal nominal is also a P of the sentence. The evidence against this analysis involves the possibilities for the scope of a floated adjective, presented in §6.1.3.

The only occurrences of preverbal expressions referring to the argument that is indexed by dative suffixes are found when the referent is an experiencer. Firstly, the experiencer of an involuntary state verb may appear before the causing state:

- (128) *Depu dakai wii-na.*
 1SG.NOM sneeze.NM 3SG.NM.do-1SG.DAT
 'I sneezed.'

In this case the nominative case on the experiencer shows that it cannot be treated as the object of the verb. The accusative case is not possible here: if the experiencer appears before the causing state, then it must be nominative or unmarked.

- (129) **die dakai wiina*

Other involuntary state predicates appear with a body part as the preverbal nominal. In these cases the dative suffixes are still possible, such as is found with *wiy* 'wet':

- (130) *Ta' wiy-na.*
 skin wet-1SG.DAT
 'I'm wet.' ('My skin is wet.'?)

It is also grammatical to mark the possessor just with a possessive pronoun in the NP that occurs preverbally; in these cases, a greater degree of affectedness is expressed than that in a clause with dative suffixes on the predicate (note that the predicate in this clause is an adjective, and not a verb, but the same is true for verbal clauses):

- (131) *Ta' dina wiy.*
 skin 1SG.POSS wet
 'I'm really wet.'

When a free pronoun is used with this construction, it appears in the accusative case:

- (132) *Die ta' ma-na.*
1 SG.ACC skin hot-1 SG.DAT
'I'm hot.'
- (133) *Die nika nua wii-na.*
1 SG.ACC sweat big 3 SG.NM.do-1 SG.DAT
'I'm really sweaty.'

Another important use of the dative suffixes is to mark the experiential object of a verb that has an adjunct nominal as part of the semantic coding strategy. For instance, 'wash (someone)' is expressed, as in many languages of New Guinea, with a construction that involves the nominal for 'water'. This appears in the immediately preverbal position, and the washee is marked on the verb by means of dative suffixes:

- (134) *Nu wi d-ebuwe-ung.*
girl water 1 SG-wash-3 SG.NM.DAT
'I washed the girl.'

With a pronominal argument as the washee, we find that the pronoun must appear in the accusative case (or the unmarked — but not nominative):

- (135) *Bie wi d-ebuwe-ma.*
2 SG.ACC water 1 SG-wash-2 SG.DAT
'I washed you.'

In this construction the accusative case on the washee clearly indicates that this argument is the P of the clause, yet it is still coded on the verb by means of dative suffixes. This is also the case for *-aka* 'scratch' and *dakai wii-* 'cough, be phlegmy, have snot':

- (136) *Ta' b-aka-ya-ung.*
skin 2 SG-scratch-COMP-3 SG.NM.DAT
'You scratched her.'
- (137) *Depu dakai wii-na.*
1 SG cough 3 SG.NM.do-1 SG.DAT
'I coughed.'

Note that these predicates, unlike 'be hot' and 'be sweaty', do not allow the dative-indexed experiencer to be in accusative case, or to follow the adjunct nominal:

- (138) **die dakai wii-na*
1 SG.ACC cough 3 SG.NM.do-1 SG.DAT
- (139) **dakai (nana/depul/die) wii-na*
cough 1 SG/1 SG.NOM/1 SG.ACC 3 SG.NM.do-1 SG.DAT

Other predicates are not so clear: 'laugh' is expressed with an adjunct nominal *suwe* 'laughter' and the verb *-usuwe* 'laugh':

- (140) *Dapu suwe d-usuwe.*
1 SG.NOM laughter 1 SG-laugh
'I laughed.'

When a P is added, it is indexed with dative suffixes and appears post-verbally; if pronominal, it may not be accusative, nor may it be preverbal:

- (141) *Dapu suwe d-usuwe-ka duwe.*
 1 SG.NOM laughter 1 SG-laugh-3 SG.M.DAT dog
 'I laughed at the dog.'
- (142) *Dapu suwe d-usuwe-ka kia.*
 1 SG.NOM laughter 1 SG-laugh-3 SG.M.DAT 3 SG.M
 'I laughed at him.'
- (143) **dapu suwe d-usuwe-ka kie*
 1 SG.NOM laughter 1 SG-laugh-3 SG.M.DAT 3 SG.M.ACC

Finally, some verbs, while not showing an adjunct nominal, do nonetheless index the P on the verb with the dative suffixes. These are all verbs that can be thought of as displaying some features of low-transitivity. In clauses with these verbs the P may appear preverbally or postverbally, as with the P of a verb like *-elei*, but unlike those verbs the dative suffixes are obligatory, regardless of the position of the nominal. A pronoun is accusative if it is present, and must be preverbal. (Alternatively, of course, the pronoun may be unmarked for case, which is always an option with arguments that may be expressed with the accusative pronoun set. Importantly, the pronoun may not be expressly nominative.) The following two sentences show that a nominal P of the clause may be either preverbal or postverbal.

- (144) *Dapu moni' dina d-akaing-ung.*
 1 SG.NOM mother 1 SG.POSS 1 SG-wait-3 SG.NM.DAT
 'I'm waiting for my mother.'
- (145) *Dapu d-akaing-ung moni' dina.*

The following ungrammatical sentences are identical to (144) and (145) apart from the lack of agreement on the verb for *moni' dina*. These sentences show that the use of the dative suffixes is obligatory with this verb:

- (146) **dapu moni' dina dakaing, *dapu dakaing moni' dina*

When a pronoun is present, it must be preverbal and accusative or unmarked, and must be indexed on the verb by means of the dative suffixes. The grammatical version is:

- (147) *Dapu bi d-akaing-ma.*
 1 SG.NOM 2 SG.ACC 1 SG-wait-2 SG.DAT
 'I'm waiting for you.'

The following ungrammatical 'near-misses' corresponding to the sentence above show that, firstly, the dative suffixes are obligatory for this verb; secondly, that the accusative pronoun may not be postverbal, and thirdly that, even if not overtly accusative, a pronominal P may not follow the verb.

- (148) **dapu bi dakaing*
- (149) **dapu dakaingma bi*
- (150) **dapu dakaingma mama*

It should be clear from the preceding discussion that the many issues involved with the dative suffixes in I'saka are far from being completely resolved, and that these affixes are multifunctional in the sense that they appear to mark not only some oblique arguments on the verb, but also the P of a variety of low-transitive clauses (providing, in effect, an oblique-

coding strategy similar to the conative in English). It should not be thought that all low-transitive clauses mark their P by means of the dative suffixes, or even the postverbal position. In the case of *-ele* 'go, follow' a goal appears postverbally, but without indexing on the verb (see §4.1.1). This is true for both goals, as in the example in §4.1.1, and for 'things followed', as in the example below:

- (151) *Dapu d-ele' pli-pa ...*
 1SG.NOM 1SG-go road-SEQ
 'I followed the road (and then ...).'

The following clause is clearly (both from its internal semantics, and from a cross-linguistic study) low in transitivity, yet does not employ either of these low-transitivity coding options:

- (152) *Dapu wì d-akai.*
 1SG.NOM water 1SG-cut
 'I crossed the river.'

Some additional issues involving the positioning of the dative, and its status as an affix or clitic, are raised in §5.7.1.

5.2.5 Reduplication: Irrealis

Verbs can be marked as irrealis through reduplication of the first syllable of the subject-inflected verb. Discussion of the mechanism of reduplication and the interesting allophony that it entails can be found in §2.4.2 and §2.6.1.

- (153) *Bala d-ele'-le'.*
 tomorrow 1SG-go-<IRR>
 'I'll go tomorrow.'
- (154) *Tau d-ei, a k-a-ka-(a)li.*
 noise 1SG-do pig.M 3SG.M-run.away-<IRR>
 'If I make a noise, the pig will run away.'

A further verbal suffix *-re* 'evident' is also found (see also §5.2.1). In most contexts, it expresses temporal immediacy, as in:

- (155) *Pì k-ei-re.*
 rain.M 3SG.M-do-EVID
 'It's raining now.'

However, there are other examples in which the suffix encodes more than just temporal information. For example, its presence on the verb *epe* 'put, throw' expresses that something is not only thrown, but also hits a target (the evident result of having been thrown). Another nice example of the use of this morpheme for effect is seen below (note that on *dakaiung* the vowel appears as *a*, not *e*).

- (156) *Nana d-akai-ung-ra bupu bima, tu*
 1SG 1SG-wait-3SG.NM.DAT-EVID sister 2SG.POSS 3SG.NM.come

móu-re.

not.exist-EVID

‘(Well,) I’ve been waiting for your sister, as you can see, and she (still) hasn’t come, obviously.’

Although the irrealis and evidential morphemes are typologically distinct (the former being reduplicative) and do not show regular alternation, it is assumed that they are mutually exclusive as their semantic domains overlap and conflict to a considerable extent.

5.3 Other verbal morphology

In addition to the inflectional categories of subject, dative, occasional object, and the non-concatenative process of reduplication for irrealis marking, there are a number of other morphosyntactic categories that are marked on or with the verb, and they are discussed in this section. In all cases they involve more than simple affixation, and so have been treated separately from those categories in the previous sections.

5.3.1 Dependent verbs

In addition to the independent verbs described above, there are a number of subject-inflecting verbs that are not able to function alone in a clause without another verb. Generally, they occur before an independent verb, agreeing with it in person, number and gender of the shared subject. There are no recorded instances of dependent verbs taking suffixes.

Some dependent verbs carry adverbial information, like *-asu* in example (157), which indicates whether the main verb is done well or badly:

- (157) *B-asu b-o!*
 2SG-do.well 2SG-do.SG.M.OBJ
 ‘Shoot it properly!’

(In this example ‘shoot’ is taken as the meaning of *-o* from the context of the discourse, and is not related to the appearance of *-asu*. This sentence is a good example of the use of light verbs without any qualifying nominal — see §5.3.2.)

Some dependent verbs are used with an aspect-modifying function. Unlike the ‘adverbial’ function of dependent verbs, in which they appear preceding the main predicating verb, the dependent verb in an aspect-modifying function is positioned following the independent verb:

- (158) *Sokaing k-ei k-ela-pu mi.*
 tobacco 3SG.M-do 3SG.M-do.habitually-? NEG
 ‘He doesn’t smoke.’

(It is likely that the final syllable *pu* of *-elapu* ‘habit’ is in fact the same fossilised morpheme that is found on many other adverbs, and on the nominative pronouns, as this syllable recurs word-finally with notable frequency throughout the data. The meaning of it is not known — see §2.3.1, §4.1 and §5.5.1 for discussion.)

Adverbial sorts of functions are also formed with adjectives, as in the following example:

- (159) *Bal b-ei nuo!*
 ball 2SG-do big
 '(Come on, you) play (soccer) with some vigour!'

In addition to this use of dependent verbs with an independent verb to specify 'adverbial' or 'aspectual' functions, some dependent verbs provide the bulk of predicative semantics in a clause through combining with and specifying the ubiquitous light verb *-ei* 'do', as in the example below (in this example the suppletive verb form *-ou*, rather than the unmarked *-ei*, is used because of the plural object) (see also the verb *-àni* in §5.4.1).

- (160) *Kasue n-akaing d-ou.*
 cassowary 1SG-search 1SG-do.PL
 'I'm going to look for cassowaries.'
 (Note that *-akaing* bears a more than chance resemblance to the nominal *nakáing* 'eye', a semantically relevant item in searching. It does, however, regularly inflect as a verb: *m-akaing b-ou* 'you search for them'.)

In the following example the verb *-àngni* 'be angry' does not occur monovalently without the verb *-ou* 'do (plural object)':

- (161) *Kia k-àngni k-ou.*
 3SG.M 3SG.M-angry 3SG.M-do.PL
 'He's angry.'

For the bivalent alternations of this verb, see §5.4.

A logical subtype of the class of dependent verbs are those verbs that are only found together: their status as verbs may be deduced from the fact that they both take subject prefixes, but nonetheless they are only found in the fixed sequence. An example of this is *-aung -angye* 'stretch (one's body)':

- (162) *Ta' n-au n-aye.*
 skin 1SG-stretch 1SG-stretch
 'I stretched.'

The verb *-ana -u* 'sit', described in §5.3.3, is another example of such a predicate.

5.3.2 Adjunct nominals

Nouns also play a prominent role in building complex and explicit predicate semantics for clauses which use the light verb *-ei* 'do' as their main inflecting verb. This is done in two main ways: either through the use of a preverbal non-inflecting nominal specifier, for example *makaing* in the complex predicate *makaing d-ei* 'I help'; or through knowledge of the nature of the main participants. For an example of this latter strategy, a clause consisting of a human subject, an animate animal object, and the verb *-ei* 'do' will be interpreted as '(Human) shoots/kills (animal)', based on the shared knowledge of the cultural world in which I'saka speakers live. In a sentence with a human subject and a normally human-made tool or artifact as the object, the verb *-ei* 'do' will be interpreted to mean 'make, process'.

Some examples of other adjunct nominals that are frequently found, and the verbs that they have been heard with, include (but are not restricted to):

<i>wang</i>	'song'	<i>wang k-ei</i>	'He sings.'
<i>sù</i>	'sago'	<i>sù k-ei</i>	'He processes sago.'
<i>dou</i>	'hand'	<i>dou k-ei</i>	'He claps.'
<i>susup</i>	'grass'	<i>susup k-akai</i>	'He cleans/cuts grass.' [†]
<i>kasue</i>	'cassowary'	<i>kasue k-ei</i>	'He shoots a cassowary.'
<i>suwe</i>	'laughter'	<i>suwe k-usue</i>	'He laughs.'

[†] This collocation requires the plural object form of the verb 'get', since cutting grass necessarily involves cutting more than just one blade — see §5.2.3.

Although this area of I'saka syntax has not been investigated in detail, it is easy to note the ease with which independent nouns can be used with their culturally appropriate meaning, and the ease with which Tok Pisin loans are incorporated into the language by means of this construction, such as *bal k-ei* 'he plays with a ball', *raitim k-ei* 'he writes', *foto k-ei* 'he takes a photo', *helpim k-ei* 'he helps' (a synonym with the construction using native I'saka morphemes *makaing k-ei* 'help(?) he-does'), *we' k-ei* 'he waits' (< Tok Pisin *wetim*; synonymous *k-akaing* 'he waits', with the same morphosyntax, involving a dative-coded P), or *wari k-ei* 'he worries'. For this last reading the native I'saka equivalent does not use an adjunct nominal, but rather a purely nominal construction:

- (163) *Nana bou plai-na.*
 1SG throat bad-1SG.DAT
 'I'm worried.'

The accusative case may, for some speakers, also be used here: *#Die bou plaina*, though the apparently topic-like prominence of the 1SG body-part possessor argument in this construction makes this a less common strategy; this is in contrast to the common use of the accusative pronouns in constructions with adjunct nominals (see, for instance (132), in which the accusative pronouns are more normal, because the subject position in the clause is not filled by the adjunct nominals *ta'* or *nika nua*).

This sort of nominal construction, using modified body parts to predicate an emotional or socially recognised condition, is found in other collocations as well without the dative suffixes:

- (164) *Nana you kaipa.*
 1SG stomach one
 'I'm cool about it.'/'I'm content.'/'I'm not making a fuss over it.'

The fact that the patently recent loans are fully incorporated into the morphosyntactic system of I'saka, and are not (at least obvious) examples of code-switching, can be seen in their occurrence with the full range of inflection, as in the following two examples, in which the Tok Pisin nouns *foto* 'photograph' and *save* 'knowledge' are used in I'saka sentences.

- (165) *Foto k-ei-ma.*
 photo 3SG.M-do-2SG.DAT
 'He's taking a photo of you.'

- (166) *Save d-ei mi.*
 knowledge 1SG-do NEG
 'I don't know.'

The productivity of this construction with loan words, and the non-compositional nature of the semantics of the resulting complex verb, implies that it is a highly salient construction in need of more investigation. It should not be thought that the number of Tok Pisin borrowings in these constructions indicates that the language has a deficient or less rich system of expression, or that it is currently undergoing massive relexification and/or language shift. In addition to sentences like *A d-o pig* 1SG-do, meaning 'I shot a pig', people in Krisa also say *A sutim d-o*, with Tok Pisin *sutim* 'shoot' incorporated into the structure as a semantically specific adjunct nominal. Even though there is a (clearly recent) explicit coding strategy for 'shooting', the non-adjunct nominal construction with nothing more than the light verb 'do' is also perfectly acceptable and normal, albeit (from a European linguistic perspective) highly underspecified semantically. The cultural context (what do people do to pigs?), given the discourse in which it occurs (what do people do to pigs, in the bush, when they've taken their dog and bow and a handful of arrows?), make the various, linguistically ambiguous, uses of the light verb perfectly communicative for I'saka speakers. A similar strategy has been noted in populous Dravidian languages such as Tamil, using English words as adjuncts to the light verb 'do', alongside native lexemes, with no evidence of language shift or even necessarily diglossia operating.

5.3.3 Verbs of location

One further prominent class of verbs shall be mentioned. These are the verbs of location of inanimate things, such as 'be at', and they are illustrated below. The verb of the first example, *siakai*, is commonly used for moveable objects, whereas *tà* in (168) and (169) is usually used to describe the location of less mobile items.

- (167) *Ò siakai ti'.*
 pot be.at fire
 'The pot is on the fire.'
- (168) *Wéi dina tà Aliakaw.*
 house 1SG.POSS be.at Aliakau
 'My house is in Aliakau.'
- (169) *Tariè tà yàng mi.*
 ear be.at leg NEG
 '(Your) ear isn't located on (your) leg.'
- (170) **nana siakai wéi*
 1SG be.at house
 'I'm at home.'

These words represent something of a conundrum for morphological analysis, as it is impossible to tell with certainty whether or not they are inflected for subject. Inanimates normally take 3SG.NM inflection on verbs, but the inflection for 3SG.NM on many verbs is irregular (see §5.2.2 and Chapter 8). The fact that these verbs of location begin with [t] and

[s] (which are probably etymologically related — see §2.3.4) is suggestive of productive inflection for 3SG.NM, at least historically. This is because a large proportion of verbs with suppletive 3SG.NM forms are *t*-initial for 3SG.NM (e.g. *tu* 3SG.NM come).

Occurrences of the verb *siakai* such as that in (167) do not show variation for number, as is illustrated by the following sentence, which has a plural subject:

- (171) *Téi amopa ni' siaka lu wéi tru.*
 wood many INTENSE be.at be.at house inside
 'There's a lot of firewood inside the house.'

Unlike inanimate things, animate subjects are 'located' using postural verbs that incorporate information about the stance or orientation of the object, such as *-ana* 'sit', *-ung* 'be at', etc. (see below). Given this distinction in the verbs, the verbs exemplified above are perhaps inherently inanimate, rendering subject inflection irrelevant.

There are some instances of the dative suffix occurring on location verbs. In these cases it encodes the possessor of the sole argument of the verb:

- (172) *Kap dina-è sakai-na wéi.*
 cup 1SG.POSS-EMPH be.at-1SG.DAT house
 'My cup is in the (?my) house.'

- (173) *Ò sakai-na.*
 pot be.at-1SG.DAT
 'That's my pot.'
 (or possibly: 'My pot is there.')

Examples of this can be found in the following paradigms and sentences, showing different verbs being used with different nouns, depending on their relation to a human-style stance or posture. The unmarked verb collocation used to indicate existing for humans, /*ādā*/ + /*ū*/ 'sit + be.at', inflects as follows (shown with the unmarked pronominal set):

- (174) *nana n-ana n-u nesing si-na su numu ni-na ku*
mama m-ana m-u isang s-ana su yumu yi-na ku
kie k-ana k-ung esang s-ana su ia ina ku/ana ku
omu (w)ona su

It is not the case that different kinds of inanimate nouns are found with the postural verbs, with the choice of verb acting as a covert classification system (as is seen commonly in other Papuan languages, e.g. Enga: Lang 1975). Rather, in I'saka, the postural verbs are used only to show actual postural alignment for animate arguments that are capable of assuming different postures, and inanimate arguments, rather than utilising these postural verbs as a form of classification, simply employ a separate set of verbs. In a sense, then, there is a classification of nominals into animate versus inanimate, but it does not go beyond this. The one exception involves villages, which are coded as if they were animate, as the following example shows:

- (175) *I'saka ana ku i'tanu.*
 Krisa.village sit be.at mountain
 'Krisa village is on the mountain.'

Here I'saka occurs not with *siaka*, the verb used to code an inanimate argument's location. Despite this *ana* is not inflected for person or number.

5.4 Further verbal morphosyntax

The previous sections have presented the regular, mono-predicative morphosyntax of verbs, with some complications in the use of dependent verbs. In this section we shall discuss valency-affecting operations such as causation and various means of valency reduction.

5.4.1 Causation and resulting states

Causation is expressed in I'saka in one of several ways, depending partly on the lexical valency of the verb, and partly on idiosyncratic factors. Additionally, where some verbs may be used both monovalently and bivalently, there can be restrictions on the aspect that is grammatical with the monovalent use that specifies the resulting or prior state.

We can identify the following relationships between monovalent and bivalent events describing the same state but with the element of causation added:

1. the same verb is used for both senses, with no morphological modification;
2. a different verb is used; the monovalent verb may not be used with an object, and the bivalent verb may not be used without an object;
3. the verb from one category (bivalent or monovalent) may be used in the other (monovalent or bivalent) with the addition of some (detransitivising or transitivity) morphosyntax.

We find, of these logical possibilities, that all three are realised in I'saka. There are no cases of verbs that take special transitivity or detransitivising morphology, such as causatives or applicatives, or passives, but there are special detransitivising constructions similar to the reciprocal. Examples of the two possibilities that are found are shown with the verbs *-ubue* and *-epili*, which have very similar semantics, showing that it is lexical stipulation, rather than strict semantic classing, that determines the morphosyntax of the construction.

Verb is used with both two-place and one-place valencies:

(176)a. *Kapu ubue-ka.*
 3SG.M.NOM afraid-3SG.M.DAT
 'He's scared.'

b. *Kapu ubue-ka duwe.*
 3SG.M.NOM afraid-3SG.M.DAT dog
 'He's afraid of dogs.'

(See also the behaviour of *suwe...-usuwe* 'laugh', which may be used monovalently or bivalently, in examples (140–(143).)

Here we can see that *-ubue* can be used in either a monovalent or a bivalent clause; if bivalent, the P follows the verb. Note that the S of the monovalent clause corresponds to the A of the bivalent one. The dative suffixes on the verb agree with the experiencer, not the instigator:

(177) *Depu ubue-na (wàlpi).*
 1SG.NOM afraid-1SG.DAT (crocodile)
 'I'm afraid (of crocodiles).'

Other examples of verbs of this class are *-ala* ‘open’, and *-esie* ‘close’:

(178) a. *Topu w-(u)la.*
 door 3SG.NM-open
 ‘The door’s open.’

b. *Topu d-ala.*
 door 1SG-open
 ‘I opened the door.’

Verb is used only as an one-place predicate, and a different verb root is used when the clause is bivalent:

(179) a. *Nana d-epili.*
 1SG 1SG-afraid
 ‘I’m afraid.’

b. *Wàlpi w-uliwi-na d-epili.*
 crocodile 3SG.NM-frighten-1SG.DAT 1SG-afraid
 ‘The crocodile scared me.’

While having roughly the same semantic content as *-ubue*, *-epili* is a purely monovalent predicate: there is no S:A correspondence. Similarly, *-uliwi* can only appear in a bivalent predicate: in addition to the sentence above, *Wàlpi wuliwina* is also grammatical (though, on the other hand, *#Wàlpi wuliwina ubuena* is somewhat odd). Another pattern of bivalency can be seen in the following example. Other verbs with this behaviour include *-asiy* ‘boil (INTR)’ and *-angwi* ‘boil (TRANS)’, *-oung* ‘fall’ and *-alo* ‘drop (TRANS)’.

Verb is used most basically as a two-place predicate, and requires a different construction when the clause is monovalent:

(180) a. *Depu n-àni d-ou.*
 1SG.NOM 1SG-angry.at 1SG-do.PL
 ‘I’m angry.’

b. *Dapu dakau n-àni ya.*
 1SG.NOM children 1SG-angry.at COMP
 ‘I’m angry at the children.’

We can see in this example that *-àni* ‘be angry at’ is a bivalent predicator, and that it may not be used in a monovalent clause, with the same S:A correspondence that was seen with *-ubue*, unless that clause is ‘detransitivised’ by the addition of the light verb ‘do’. This is similar to a possible reciprocal strategy (see §5.4.2).

5.4.2 Valency reduction: reflexives and reciprocals

There is no morphology associated exclusively with reflexive or reciprocal clauses. Rather, the regular bivalent pattern is used, with nouns or pronouns referring to the same participants appearing as both the A and the P of the clause. This is shown in the example below; note that, while a free (nominative or unmarked) pronoun referring to the ‘A’ is not required (or natural), the accusative pronoun referring to the ‘P’ is obligatory:

- (181) *Die d-elei.*
1SG.ACC 1SG-see
'I saw myself.'
- (182) # *nana/depu die delei*
1SG/1SG.NOM 1SG.ACC 1SG-see
- (183) **(nana/depu) delei*
(not grammatical with the meaning 'I saw myself', but acceptable for 'I saw (something)')

Reciprocals are in the main morphosyntactically identical to reflexives, and ambiguous. The necessarily plural reference of reciprocal constructions means that there is no separate pronoun indicating the P, but an unmarked pronoun is obligatory to refer to the combined subject:

- (184) *Esang s-a.*
3DU 3DU-hit
'They hit each other.'/'They hit themselves.'
- (185) **sa*
(Good with the reading 'they hit (it)', but not as a reciprocal)
- (186) **esang esang sa*
(Good with the unlikely reading 'They two_i hit those two_j/*_i', but not as a reciprocal)

The obligatoriness of the free pronoun does mean that there is a syntactic structure that is uniquely associated with the reflexive/reciprocal construction, albeit one that is dependent on pre-existing morphology. An alternative, and not widely attested, reciprocal construction involves the light verb 'do' and a clause fully specified for all its arguments, with both A and P at least optionally present:

- (187) *Dupu die di di.* (< *di-a di-ou*)
1PL.NOM 1SG.ACC 1PL:hit 1PL:do
'We hit each other.'
*'We hit ourselves.'/'*We hit me.'
- (188) *Di di.*
- (189) *Die di di.*

This construction has not been widely attested. For the accusative pronoun used here, see §4.1.3.

5.5 Functions of pronouns

As described in §4.1, there are four pronoun sets in I'saka, with the maximum number of distinctions found on the singular pronouns. Their morphological structure has been presented in that section, and in this section we shall summarise their uses.

5.5.1 Personal pronouns

We can note that the accusative pronouns bear a close resemblance to the human object suffixes shown in Table 27 (§5.2.3). However, unlike the suffixes, the accusative pronoun always precedes the verb. The recurrence of the sequence *-pu* in the nominative set is interesting, as this possible morpheme/formative is exemplified in the data in other contexts (most regularly, adverbs are also usually formed with *-pu*). Its putative independent meaning appears to be something like ‘emphatic’ or ‘means of action’. This can be seen in the following example, in which the appearance of the *-pu* seems to imply a strong causal link between the two clauses:

- (190) *Bala pì k-ei móu-pu d-ele'-le' pili.*
 tomorrow rain 3SG.M-do not.exist-EMPH? 1SG-go-<IRR> garden
 ‘If there’s no rain tomorrow, then I’ll go to the garden.’

Other support for the argument that this is a (fossilised) morpheme is the fact that the intervocalic /p/ is not prone to lenition — see §2.3.1. The nominative form of the pronoun is restricted to referents serving as the subject of the verbal clause, either bivalent or monovalent, or the subject of a non-verbal clause. Some examples are:

- (191) *Depu téi d-akai.*
 1SG.NOM wood 1SG-cut
 ‘I cut wood.’
- (192) *Kepu k-ele' Awakali.*
 3SG.M.NOM 3SG.M-go Vanimo
 ‘He’s gone to Vanimo.’

The unmarked form is the most common and flexible form of the pronoun, as it can have a subject or dative referent, and may at times even be used as a possessive pronoun. It is absolutely restricted only in that it may not appear as the object of a clause; this is always reserved for the accusative pronominal set. Compare the sentence above with the following nearly identical version using an unmarked pronoun:

- (193) *Kia k-ele' Awakali.*
 3SG.M 3SG.M-go Vanimo
 ‘He’s gone to Vanimo.’

It is not well understood what motivates the choice of the unmarked form over the nominative and possessive pronouns (or vice versa). Other examples of the unmarked pronouns can be seen below, and in §4.1.1.

Subject of verbal clause:

- (194) *Nana trà n-òu.*
 1SG sago.delight 1SG-eat
 ‘I ate sago delight.’

Dative recipient:

- (195) *Buk n-ani-ma mama.*
 book 1SG-give-2SG.DAT 2SG
 ‘I gave you the book.’

Possessor in NP:

- (196) *Nai nana b-asa-ke.*
 boy 1SG 2SG-carry-3SG.M.H.OBJ
 'You carried my child.'

The accusative pronouns are restricted to pronominal arguments serving as the object of a bivalent clause; this is the only morphosyntactic environment in which they may appear, and so they are the most restricted of the pronoun sets:

- (197) *Pi bi k-ang.*
 rain.M 2SG.ACC 3SG.M-make.wet
 'The rain wets you.'

As mentioned above, the unmarked personal pronouns are able to carry an inflection for accompaniment, *-sa*:

- (198) *K-ele' nana-sa.*
 3SG.M-go 1SG-ACCOM
 'He went with me.'

This cannot occur with pronouns other than the unmarked pronoun set, though it is grammatical with common and proper nouns (see §5.1.2):

- (199) **depu-sa,* **die-sa*
 1SG.NOM-ACCOM 1SG.ACC-ACCOM

Like proper names, the unmarked personal pronouns may also occasionally combine with their corresponding dative suffixes. This creates yet another alternative possessive pronoun. It is not known what motivates a speaker's choice of the nominative pronoun + dative suffix combination over the possessive pronouns illustrated in Tables 20 and 21.

5.5.2 Possessive pronouns

The possessive pronouns have been introduced in §4.1.4 and §4.1.5. Examples of possessive pronoun are shown below. These two examples both show the possessive pronoun inside an NP, though it is also possible for a possessive pronoun to serve as the predicate of a clause, and be negated. See §5.7.2 for an example of this.

- (200) *Pùng dina wu-nasù.*
 y.sibling 1SG.POSS 3SG.F-sit
 'My sister's sitting down.'
- (201) *Wéi yumu nuo.*
 house 2PL.POSS big
 'Your house is big.'

The possessive pronouns may function as predicates as well, expressing the notions 'mine', 'yours' etc., as well as 'my' and 'your':

- (202) *Nina mi.*
 1SG.POSS NEG
 '(It's) not mine.'

When alternative possession is used, such as the unmarked pronoun with the dative suffixes (§4.1), the same syntactic behaviour is observed.

5.6 Adjectives

Adjectives are morphosyntactically distinct from both nouns and verbs (see §3.4). A significant proportion of adjectives appear to be morphologically complex, bearing a (putative) suffix *-pa* that is not found on either nouns or verbs, and does not, synchronically, contain any independent meaning. Since the adjectives may not appear without the suffix, it appears to be a fossilised affix, and so has not in the main been shown separated from the root with which it occurs.

- (203) *I' inopa.*
village distant
'The village is far away.'
- (204) *Osol pli yuplu.*
Osol road close
'The road at Osol is nearby.'
- (205) *Pì k-ei nuo ni'.*
rain.M 3SG.M-do big INTENSE
'It's raining really heavily.'
- (206) *Téi amopa ni' siaka lu wéi tru.*
wood many INTENSE be.at 3SG.NM.be.at house inside
'There's a lot of firewood inside the house.'

Adjectives may be combined with the dative suffix in experiential constructions, as illustrated below (and also in §5.2.4). In these examples, the dative suffix encodes the experiencer.

- (207) *Yóu pali-ni.*
stomach hungry-1PL.DAT
'We are hungry.'
- (208) *Ta' takau-ma?*
skin hot-2SG.DAT
'Is it (the fire) burning you?'
- (209) *Sù takau-na tuwo.*
sago hot-1SG.DAT mouth
'The sago is burning my mouth.'

Other uses of the dative suffixes coding experiencers, but predicated from verbs, can be found in §5.2.4.

5.7 Clause-final particles

Various polarity, aspect and mood distinctions are marked at the end of the clause. In addition to clauses with none, or just one particle, there are some complications to do with

clauses that have both clause-level particles finally, and a dative suffix on the verb. These are discussed in the following sections. The only occurrences of more than one particle on the same clause that have been observed in natural speech involve one of the following particles and a dative suffix; sequences of more than one of the particles exemplified in this section have not been observed.

5.7.1 *Completive*

The completive (COMP) particle *ya* indicates that the event denoted by the predicate of the clause has been completed; it is usually found with active, dynamic predicates. Two examples, showing both an active verbal predicate and a non-active adjectival predicate, can be seen in the following two sentences.

(210) *Sù bima n-òu-ma ya.*
 sago 2SG.POSS 1SG-eat-2SG.DAT COMP
 'I ate your sago.'

(211) *Nù dina nuo ya.*
 daughter 1SG.POSS big COMP
 'My daughter's all grown up.'

The following example, which has a beneficiary following the verb in the normal position for nominals with such semantic roles, shows that this particle is not attached to the verb, but is rather a piece of clause-final morphology.

(212) *Trà d-ei-ka tani' ya.*
 sago.delight.NM 1SG-do-3SG.M.DAT father COMP
 'I made the sago delight for my father.'

Possible counters to this claim are found when the dative suffix is used to mark the object of the experiential construction (§3.4, §5.2.4), and is not coreferent with the subject of the clause. An example of a coreferential clause with no dative marking is shown in:

(213) *Nana ta' d-aka ya.*
 1SG skin 1SG-scratch COMP
 'I scratched myself.'

(214) **nana ta' dakayana, *nana ta' dakanaya*

When the two arguments are not coreferent, the dative suffix appears outside the completive marker:

(215) *Ta' b-aka-ya-ung!* (phonetically [bʃaːjaŋ])
 skin 2SG-scratch-COMP-3SG.NM.DAT
 'Scratch her!'

This placement raises some questions about the nature of the juncture between the verb, the dative suffix, and the completive marker. From sentences such as (213) it is clear that the completive marker must occur sentence finally. From the sentences in §5.2.4 we can see that the dative suffixes occur final on the verb, but freely allow nominals to appear in the same clause following them. Sentences such as (215) thus run counter to the prediction that

we would find the dative suffix final on the verb, followed by the (possibly enclitic) completive particle. At this point we have no clear explanation for this discrepancy.

5.7.2 Negative

Negation is expressed on all clauses, with verbal, adjectival or nominal predicates, with the negative particle *mi*, which appears clause-finally. Some examples of use of the negative are shown below, with verbal and adjectival predicates.

(216) *Pì k-ei mi.*
rain.M 3SG.M-do NEG
'It won't rain.'

(217) *Wasa dina taka mi.*
basket 1SG.POSS heavy NEG
'My basket isn't heavy.'

With a nominal predicate the same negator is used:

(218) *A dina mi.*
pig.M 1SG.POSS NEG
'(That's) not my pig.'

The predicate alone may be mentioned with the negative particle, if the subject of the clause is retrievable from the discourse. This is true for both verbal and non-verbal predicates:

(219) *Dina mi.*
1SG.POSS NEG
'(That's) not mine.'

In combination with the irrealis, the sense of negation can apply to the physical possibility, not necessarily solely the negation of the future event:

(220) *Depu d-ele'-le' yàng-ri mi.*
1SG 1SG-go-<IRR> leg-INSTR NEG
'I'm not up to going on foot.' OR 'I'm not going to go by foot.'

Negative existence ('there is no __') is expressed with *mòu*:

(221) *Sù mòu.*
sago not.exist
'There's no sago.'

As with the completive, the negative is not a verb-final particle, but a clause-final one. This can be shown with sentences in which there is a postverbal element, which can intrude between the verb and the negator (though see §5.2.1).

5.7.3 Imperative

The imperative particle *mú* indicates that the clause is a command to the hearer. As such, *mú* is found only with verbal predicates that have a second person inflection for subject.

- (222) *B-ele' mú!*
2SG-go IMP
'Go!'
- (223) *Isang s-ele' mú!*
2DU 2DU-go IMP
'You two, go now!'
- (224) *Yumu yi-nore' mú!*
2PL 2PL-go.PL IMP
'All of you, go now!'
- (225) *Sù b-ei mú!*
sago 2SG-do IMP
'Make the sago!'

The fact that this particle begins with *m-*, the nasal allomorph of the 2SG subject prefix, leads one to suspect that it may in fact be (or at least originate from) a dependent verb inflected for 2SG subject. As imperative clauses are generally pragmatically restricted to second person in any case, this might be plausible, except for the fact that examples of 2PL and 2DU subjects also show *mú*, not **yíng* (putatively expected, if the hypothesised *úng* was an inflecting verb). It should also be noted that this construction was heard very rarely, though it was freely accepted when materials were checked. Other, less compelling, imperatives are formed with no additional morphology:

- (226) *B-au m-òu!*
2SG-come 2SG-eat
'Come and eat!'

A sequence of the negative *mi* (see §6.3) and the imperative *mú* is not grammatical for negated imperatives, since there is a special prohibitive marker *ni*.

5.7.4 Prohibitive

The prohibitive particle *ni* indicates that the clause is a negative command to the hearer. As with the positive imperative described in §5.7.3, it appears clause-finally:

- (227) *Di m-a ni!*
1SG.ACC 2SG-hit PROHIB
'Don't hit me!'
- (228) *Mama a b-o ni!*
2SG pig 2SG-shoot PROHIB
'Don't shoot the pig!'

The prohibitive may be used with non-volitional predicates:

- (229) *Mama b-epili ni!*
2SG 2SG-afraid PROHIB
'Don't be frightened!'

With respect to the variability of the position of the completive particle with respect to dative suffixes, it seems that the prohibitive cannot precede the dative agreement markers:

(230) *Mama wè m-akane-na ni.*
 2SG fish 2SG-hide-1SG.DAT PROHIB
 ‘Don’t you hide my fish now!’

(231) *B-ai-na ni.*
 2SG-take-1SG.DAT PROHIB
 ‘Don’t take mine!’

(231)' **b-ai-ni-na*

The use of this particle may also occasionally be found in statements, not only in commands. Thus, clauses with second person subjects are sometimes negated with *ni* PROHIB rather than *mi* NEG, regardless of whether or not the speaker is actually commanding the listener. An example of this can be seen in the following sentence, which cannot, because of the time expression, be construed as being an imperative.

(232) *Kelie b-ele' i' ni.*
 yesterday 2SG-go village PROHIB
 ‘You didn’t go to the village yesterday.’

Note that the lack of a recognisable 2SG inflection on the *ni* particle makes it less convincing that the general imperative (§5.7.3) is in fact inflected for this person, but is in fact simple coincidence: the chance of a random consonant occurring to match the *b-* of the 2SG is high in a language with only eight consonants.

5.7.5 Dubitative

The dubitative marker *wo* is found at the end of clauses as a marker of uncertainty on the part of the speaker about the truth of the utterance. It may be used as a marker of evidentiality, to indicate that the speaker is not vouching for the veracity of the statement, or it may be a marker of uncertainty about the future plausibility of the sentence:

(233) *Trà bima ble nu ble w-àung wo ...*
 sago.delight 2SG.POSS that girl that 3SG.NM-eat DUB
 ‘That sago delight of yours, that girl might have eaten it (I think;
 but I don’t know either).’

(234) *Bala tu-tu wo ...*
 tomorrow 3SG.NM.come-RED DUB
 ‘She might come tomorrow (but I’m not sure).’

As indicated in the examples above, the dubitative particle is often lengthened, [wɔːː]. Further, it is associated with a slow down-gliding intonation contour, both on the particle itself and to a lesser extent on the rest of the preceding clause. An additional example of this particle, in a richer context, can be seen in the text in §7.4.

6 *Syntax*

In this section we shall discuss various basic elements of the syntax of I'saka that are not easily described in terms of morphological possibilities or morphological restriction. These include the word order of elements of the clause and of the noun phrase, and some simple features of clausal conjunction. By no means are the syntactic structures of I'saka completely described in this section, but rather only a small and immediately salient selection of constructions are presented, selected more for their frequency of appearance than necessarily for their typological unusualness.

6.1 Word order

I'saka clauses and phrases exhibit a quite strict word order, though there are pragmatic alternatives for many constructions. This section starts with an overview of clausal word order, and then proceeds into noun phrases. This order of presentation has been chosen to follow the possibilities for adjectives, which can in many instances appear outside the NP of the noun they modify.

6.1.1 Declarative word order

The basic order of elements in a declarative sentence is SOV, with Oblique participants (including those that may be encoded on the verb by the dative suffix) appearing after the verb (these include nominals bearing the following semantic roles: instrument, companion, recipient, beneficiary, goal, and location, and also possessor of P). If more than one oblique is present, then goal and location will follow other peripheral arguments. Temporals are usually clause-initial.

(235) S Ø TIME NP_{SUBJ} NP_{OBJ} V NP_{ASSOC, BEN, REC, INSTR} NP_{GOAL, LOC}

None of these elements are obligatory. Some examples of the practical consequences of these rules governing word order are exemplified in (236)–(240) below.

Postverbal oblique:

(236) *Numupu di-Ø ku wéi.*
1PL.NOM 1PL-(sleep) be.at house
[NP Subject] VERB – – VERB [NP Location]
'We were all sleeping in the house.'

- (237) *Wì tà wéi tru.*
 water be.at house inside
 [NP Subject] VERB [NP Location]
 'The water is inside the house.'

- (238) *Tani' dina k-ung wi'.*
 father 1 SG.POSS 3G.M-go.down sea
 [NP Subject] VERB [NP Location]
 'My father went down to the sea.'

Clause-initial temporal:

- (239) *Kelie trà sle n-am-ung moni' dina-è.*
 yesterday s.delight this 1 SG-cook-3SG.NM.DAT mother 1 SG.POSS-EMPH
 TIME [NP Object] VERB [NP Beneficiary]
 'Yesterday I cooked this sago delight for/with my mum.'

Instrument precedes locations:

- (240) *Depu d-ele'-le' yang-ri I'saka i'.*
 1 SG.NOM 1 SG-go-<IRR> leg-INSTR Krisa village
 [NP Subject] VERB [NP Instrument] [NP Goal]
 'I'll walk to Krisa village.'

Deviations from the word order presented here are rare, although preverbal constituents are occasionally found either at the end of the clause for emphasis, or in the pragmatically marked preverbal 'focus' position in which elements are pragmatically salient, and, with the exception of nominals or pronouns that simply double a clause-external topic, do appear to be necessarily focused. This is most commonly found if that constituent is the answer to a content question. Furthermore, there is a pre-sentential topic position, which is filled with any NP (subject, object, or an oblique) from the clause. The topic NP in the main clause can optionally be doubled in the clause, in the preverbal focus position (unless the clause contains another argument with the pragmatic function 'focus').

- (241) $S' \rightarrow NP_{TOP} S(/NP)$

Note that an NP in the topic position retains its normal case-marking possibilities, as seen in the following examples:

SUBJ as topic:

- (242) *Dapu, a ble dapu n-òu.*
 1 SG.NOM pig.M that 1 SG.NOM 1 SG-eat
 'Me, I want to eat (some of) that pork.'
- (243) *Dupu, kelia n-oru.*
 1 PL.NOM yesterday 1 PL-come
 'We came yesterday.'

OBJ as topic:

- (244) *Kie, amo m-a?*
 3 SG.M.ACC who QSG-hit
 'And him, who hit him?'

(244)' **kie, amo kie ma?*

(244)' is ungrammatical because the question word *amo* already appears in the preverbal focus position, and so it is impossible for the topic to be doubled there. The examples below show that even an oblique, if it is doubled, appears in the preverbal focus position, not in the expected postverbal oblique position. Note that an instrument, which is normally marked not just by postverbal position but also by the case marker *-ri*, when topicalised requires that a pronoun remain behind in the original position to carry the case marking.

OBL location as topic:

(245) *I' ble, nesing i' s-ele'-le'.*
village that 1DU village 1DU-go-RED
'That village, we two're going there.'

OBL instrument as topic:

(246) *Dá ble téi d-akai omu-ri.*
axe this tree 1SG-cut 3SG.NM-INSTR
'This axe, I chop trees with it (her).'

(247) *Pái ble a d-o omu-ri.*
arrow this pig 1SG-shoot 3SG.NM-INSTR
'That arrow, that I shoot pigs with it (her).'

(247)' **dá ble téi dakai*

(247)" **dá-ri ble téi dakai*

If the topic can appear repeated in the preverbal 'focus' position (because there is no other specified focused element), then overt case marking there (as nominative or accusative) licenses a pronoun in topic position to be unmarked for case:

(248) *Mama, bi k-elei ya?*
2SG 2SG.ACC 3SG.M-see COMP
'And you, did he see you?'

The preverbal focus position is shown in the following section.

6.1.2 Interrogative clauses and the word order of focus

The word order of interrogative clauses differs from that of declarative clauses. In an interrogative clause an interrogative pronoun (illustrated here with *amo* 'who') will appear in the preverbal focus position. This is true even if the referent of the question word is the subject of the clause, and mirrors the ordering of constituents under focus in questions, mentioned above.

(249) *Trà ble amo b-ei?*
sago.delight.NM that who QSG-do
[OBJ] [SUBJ] [VERB]
'Who made that sago delight?'

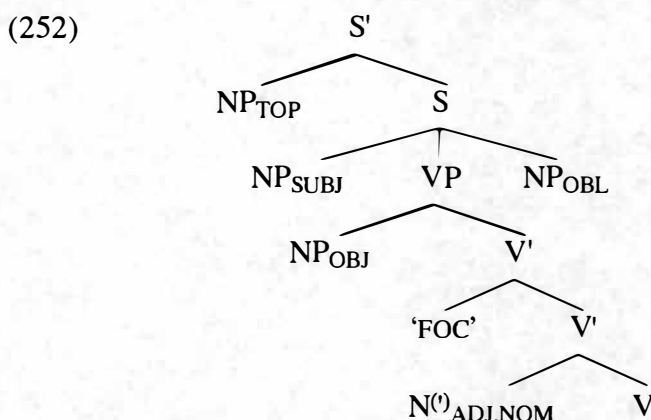
An A-P-V order is not possible when the subject is a question-word pronoun:

(250) **amo trà ble bei?*

This suggests that there is a structural position for pragmatically prominent core elements of the clause, which is immediately preverbal, a phenomenon not uncommon in SOV languages. Note that a questioned oblique still occurs in the normal postverbal position:

(251) *Sù b-akale kaung-ri?*
 sago 2SG-wrap what-INSTR
 'What will you wrap the sago with?'

Combined with the topic position data seen in §6.1.1, the adjunct nominal information from §5.3.2, and the knowledge we have about the position of oblique arguments in I'saka (see §6.1), we can conclude that the phrase structure is as seen in (252):



Other factors relevant to phrase structure are presented in the following sections.

6.1.3 Ordering of adjectives

Adjectives exemplify a more complex and changeable set of ordering rules, with speakers varying with respect to adjective usage. Essentially, in addition to appearing inside the NP in which a nominal occurs, an adjective can also be found postverbally; this is a quite frequent strategy. The two options for word order can be seen in the following sentences. In the first sentence we can see an NP with both the noun and the adjective inside it. It occurs preverbally, as we would expect of a P.

(253) [_{NP} *A nuo*] *k-ani-ung* *Ros.*
 pig.M big 3SG.M-give-3SG.NM.DAT Rose
 'He gave a big pig to Rose.'

The next sentence also has an element which is translated as 'big pig', but in this case the noun *a* 'pig' occurs preverbally, and the adjective is found postverbally:

(254) *Daka ásongpa* [_{NP} *a*] *k-o* [_{ADJ} *nuo*].
 Man stealth(y) pig.M 3SG.M-do.SG.M.OBJ big
 'The stealthy man shot a big pig.'

This section shall discuss the possibilities and restrictions of this split-modification construction.

In monovalent clauses, a subject-linked adjective occupies the peripheral (i.e. non-subcategorised) postverbal slot, functioning as a secondary predicate (255):

- (255) *D-ele' ásongpa ni'.*
 1SG-go stealth(y) INTENSE
 'I go along, very stealthily.'

In realis bivalent clauses a subject-linked adjective is placed in the noun phrase with the subject, and the object-linked adjective fills the postverbal position, as seen earlier in (254). We can thus conclude that the ability of an adjective to appear in a postverbal position is dependent on the nominal that it refers to being the S or the P of the clause, that is, an absolutive argument. This can be shown to be the case by examining the following clauses, using the quantifier *purupa* 'all, complete' in a postverbal position. The first sentence has a singular subject, so the interpretation of the quantifier as modifying the P is not surprising. In the second clause, *dakau* is the only argument of the monovalent clause, and so the interpretation is not in question.

- (256) *Sù n-òu purupa.*
 sago 1SG-eat all
 'I ate all the sago.'
- (257) *Dakau onde purupa.*
 children go.PL all
 'All of the children went.'

This third clause shows a plural A and a potentially (and pragmatically likely) plural P; the postverbal quantifier can only be interpreted as modifying the P, not the A, showing that this quantification applies to an absolutive grouping: S and P, as opposed to A.

- (258) *Dakau sù òung purupa.*
 children sago eat all
 'The children ate all of the sago.'
 *'All of the children ate the sago.'

It should be noted, however, that if a peripheral argument is already present postverbally, both subject and object-linked adjectives must occur in the NP of the argument that binds them, as seen in (253). One example, however, shows both a postverbal nominal and a postverbal adjective: the post-verbal nominal is the apparent P of the sentence, but the scope of the adjective is over the chaser *duwe*, not the chased *yùng-paul*. This is evidence that the clause is monovalent, not bivalent, and the nominal *yùng-paul* is a true oblique, and not simply an obliquely-coded P.

- (259) *Duwe abli yùng-paul ámopa.*
 dog chase bird-chicken many
 'Lots of dogs are chasing after the chicken.'

The following example illustrates the apparent unacceptability (at least prescriptively) of a preverbal object-linked adjective when the postverbal position is empty.

- (260) **depu sù takau n-òu*
 1SG.NOM sago hot 1SG-eat
 'I ate hot sago.'

Although the above pattern is robustly attested (particularly the postverbal placement of object-linked adjectives), exceptions have been observed. More data is necessary to be sure of the rules of adjective placement, particularly with reference to the ordering of deictics and possessive pronouns, and the presence of additional tense/aspect information (e.g. irrealis or completive morphemes) in the clause. The current data suggests that all these elements are relevant to adjective ordering.

6.1.4 Noun phrase order

The order of elements in the noun phrase is tightly constrained; when sequences of NP-elements appear outside this normal ordering, the usual interpretation is that they are not actually an NP unit, but rather an NP + predicate. Of course, if there is a further predicate, then the ill-ordered string renders the sentence ungrammatical, or at best the result of false starts.

Normal (that is, non-elicited) discourse rarely presents any adjectives or relative clauses as modifiers in the NP (though possessives and demonstratives are not unusual). It is certainly the case that an NP with all four of the positions listed below have never been attested, nor are we claiming that they are possible. Based on the observed orders of elements in smaller NPs, however, we can formulate the normal order of elements in the NP:

(261) NP \emptyset N ADJ RC/NUM POSS/DEM

In many cases the possessor is not marked inside the NP, but rather on the verb of the clause in the form of dative suffixes. Deictics and possessive pronouns must be placed after the noun they modify, and following any numerals, but are freely ordered with respect to each other.

Examples of NPs illustrating these various types of modifiers can be found in the following clauses (note the variant *nua* for the more common *nuo* 'big'):

N – ADJ – DEM
 (262) A *nua ble d-o-ma*.
 pig.M big this 1SG-shoot-2SG.DAT
 'I shot this big pig of yours.'

N – ADJ – NUM
 (263) *a nua sia*.
 pig.M big two
 'two big pigs'

(Note that many modifiers, especially numerals, appear most naturally separated from the head noun, following the verb, as described in §6.1.3.)

N – RC
 (264) *B-àu, a nua [d-o kelie] sesing*.
 2SG-come pig.M big 1SG-shoot yesterday 1DU:eat-RED
 'Come on, let's eat that large pig I shot yesterday.'

Relative clauses have not been observed in conjunction with other modifiers in the NP; attempts to elicit this sort of structure have been met with biclausal translations, such as 'The

big pig there, I shot it yesterday. Let's eat it'. More information on relative clauses is in §6.8.

6.1.5 Non-verbal predicates

The word order in non-verbal predicates parallels that found in verbal predicates in terms of the functions of the elements of the clause. The predicative noun or adjective is found in the same final position, just as the verb is in verbal clauses, and the subject of the predicate is again in initial position.

Examples of these predicates have already been given in the sections on nouns and adjectives, and some additional examples are shown in the following sentences:

(265) *Kia sami dina.*
3SG.M WF 1SG.POSS
'He's my father-in-law.'

(266) *Ongni dina bua wini-ka.*
MBW 1SG.POSS woman MB-3SG.M.DAT
'My aunt by marriage is a (my) mother's brother's wife.'

Numerous other examples can be found elsewhere in the grammar.

6.2 Involuntary state subjects

In many languages of New Guinea an involuntary state is usually coded with the experiencer as the apparent object of the construction and the stimulus as a nominal (in contrast to reference-dominated languages like English in which the experiencer is coded as the subject of the event). In I'saka the construction most closely resembles the New Guinea norm, but the experiencer, while appearing in accusative case (if it is pronominal) is marked on the verb with dative suffixes. This might reflect the fact that dative suffixes are more productive than is strict object marking on the verb, but may also reflect the semantic role associated with the experiencer.

The predicate 'sick', for instance, is expressed with a morphological non-subject. We can call it a non-subject only because the morphology coding of the argument is not consistent: based on the form of the pronoun we would think that 1SG was an object, but based on the fact that it is indexed by a dative suffix on the verb we are led to believe that it is an oblique.

(267) *Di wii-na.*
1SG.ACC 3SG.NM.do-1SG.DAT
'I'm sick.'

A literal glossing of this sentence is impossible. The accusative pronoun, in preverbal position, signals that 'I' should be glossed as 'me': '(it) sickens me'. Despite this, the dative suffixes following the verb imply that we are dealing with a possessor or beneficiary: '(it) sickens for/on me'. We are thus in a dilemma about the grammatical function associated with the first person singular participant in (267): the dative suffixes imply that it is an oblique, and the accusative case implies that it is object.

Other involuntary state sentences do not use dative suffixing:

- (268) *Pi di k-ang.*
 rain.M 1SG.ACC 3SG.M-wet
 'The rain soaked me.'

In addition to sentences of the sort seen in (267) and (268) the experiencer may also appear in a nominative case (or, as is true of almost all constructions, the unmarked case, which for example (269) would mean coding the 1SG pronoun as *nana*). This is found only if the argument in question appears before a causing event, and if an experiencer argument is called for by the construction. A nominative experience is illustrated in the following example, where the predicate ('sick') subcategorises for an experiencer, causing the sickness to be manifested in that experiencer.

- (269) *Depu wii-na.*
 1SG.NOM 3SG.NM.do-1SG.DAT
 'I'm sick.'

Other dative experiencers are described in §5.2.4. The general construction that has both a nominal and an inflecting verb as part of the predicate is also found in the adjunct nominal construction, which has been described in §5.3.2.

6.3 Negation

Negation can be marked only once for the clause, and it is always at the end of the clause, following both the predicate and any oblique nominals that are in clause-final position. The negative particle, *mi*, is invariant for person, number, gender or tense/aspect/mood distinctions:

- (270) *Di wii-na mi.*
 1SG.ACC 3SG.NM.do-1SG.DAT NEG
 'I'm not sick.'

- (271) *Bu dina mi.*
 that 1SG.POSS NEG
 'That's not mine.'

Despite the invariant position of the negative marker at the end of the whole clause, the scope does not necessarily apply over the entire clause. In the following construction, which contains both an accompaniment and a locative oblique argument following the verb, the accompaniment argument can be negated without negating the rest of the clause:

- (272) *Tani' k-ele' moni' tro pli mi.*
 father 3SG.M-go mother with garden NEG
 'Dad went to the garden without Mum.'

The example above is ambiguous, with the additional reading 'Dad didn't [go to the garden with Mum]' (and so no-one went). Nevertheless, all speakers who were consulted agreed that the reading of the sentence given in the translation above is also a normal interpretation of the scope of the negative.

In an inflected adverbial + light verb 'do' construction, it is the former dependent verb that is negated, as illustrated in the example below:

- (273) *Trà d-asi d-ei mi.*
 sago 1SG-well 1SG-do NEG
 'I made the sago badly.'
 (*I didn't [make sago (well)].)

The topic of scope of negation deserves more detailed treatment than can be presented here, and it is hoped that further works on I'saka grammar can delve into this topic in more depth.

6.4 Nominal conjunction

In addition to conjunction by the simple apposition of NPs, or the use of a conjunction, a series of nominals may be coordinated within the one NP, or alternatively a series of NPs may be linked in the clause. Two of the strategies that may be used in this function are described here.

6.4.1 Adjacency

Subject or object nominals may be conjoined through adjacency in the clause, provided that, where appropriate, the verb shows agreement for the sum of the features represented by both constituents. In the first example below the subject of the monovalent verb is the two nouns *moni* and *tani*; they are conjoined in the NP by adjacency, and the verb agrees with the combined dual category.

- (274) *Moni' tani' s-ele' Awakali.*
 mother father 3DU-go Vanimo
 'Mum and dad are going to Vanimo.'

The following example shows two nouns conjoined as the object of the clause. Since objects do not show any agreement (other than the limited set of 'envelopment' verbs and the light verbs 'do' and 'get' — §5.2.3), there is no overt indication of the shared phrase structure of the two nouns.

- (275) *Sù wesie n-òu.*
 sago greens 1SG-eat
 'I ate sago and greens.'

The dative argument in a clause behaves similarly to the subject, with respect to behaviour when conjoined: simple apposition is enough, with no overt conjunction being required, as in:

- (276) *D-ele'-le'-sa ba' pung.*
 1SG-go-RED-3DU.DAT elder.sibling younger.sibling
 'I'm going to my brother and sister.'

In addition to these strategies, it is also possible to conjoin dative nominals with the postposition *tro*, described in the following section and in §5.1.2 and §6.7, necessarily following the verb.

6.4.2 Postpositional accompaniment

Subject or object NPs may be conjoined using the postposition *tro* 'with'. The behaviour of the conjunct differs depending on the syntactic role it bears. A second non-subject noun phrase may appear as a modifier to the first object, in the preverbal object NP position, as in:

- (277) *Wesie sù tro n-òu.*
tulip sago with 1SG-eat
'I ate greens and sago.'

Alternatively, the conjunct may appear as an oblique argument in the postverbal oblique position, as in:

- (278) *Sù n-òu wesie tro.*
sago 1SG-eat tulip with
'I ate sago with greens.'

When a subject argument consisting of two nominals appears with one conjunct marked by *tro*, the second noun must be coded as an oblique argument, and appear in the postverbal oblique position, as in the following examples.

- (279) *Ba dina sù k-òung nana tro.*
brother 1SG.POSS sago 3SG.M-eat 1SG with
'My brother ate sago with me.'
- (280) *Tani' k-ele' moni' tro plì.*
father 3SG.M-go mother with garden
'Dad went to the garden with mum.'

Notice that the verbs in these cases do not inflect for the combined dual number, but rather only show agreement for the person, number and gender of the preverbal argument in the subject NP. This suggests that the postverbal NP is in fact truly an oblique, since the agreement does not include it, as it did with the simple adjacency conjunction type seen in §6.4.1. This suggests that it is not possible for a *tro*-marked oblique to modify a noun in an NP if the NP is the subject of the clause, but only if it is the object.

There is some evidence to suggest whether or not it is permissible to link two subject nominals with *tro* on the same side of the verb. The unacceptability of (281) below may be partly caused by the attempt at subject co-ordination, but in truth we would expect this sentence to be ungrammatical in any case, as the verb is inflected for the first person subject only.

- (281) **nana ba dina tro sù n-òu*
1SG brother 1SG.POSS with sago 1SG-eat
'My brother and I ate sago.'

Even with non-singular number agreement, the sentence is still ungrammatical:

- (282) **nana ba dina tro sù sùng*
1SG brother 1SG.POSS with sago 1DU:eat
'My brother and I ate sago.'

This sentence makes it clear that a *tro*-marked accompaniment is not grammatical in a preverbal position.

6.5 Clause chaining

Adjacent verbs may sometimes share constituents, even when they do not form a serial verb construction. Object noun phrases are normally obligatory in bivalent clauses, but may be omitted if the clause immediately prior has the same object. Intonation patterns show that these are distinct clauses, rather than serial verbs:

- (283) *Sù d-ai, n-òu.*
 sago 1SG-get 1SG-eat
 'I got some sago, and ate [it].'

In the following sentence the oblique argument is represented by a full independent pronoun in the second clause, even though it is completely recoverable from the verbal agreement:

- (284) *Sani b-o n-àni-ma mama.*
 like.that 2SG-do.M 1SG-be.angry.at-2SG.DAT 2SG
 'If you behave like that, I'll be cross at you.'

The following example shows that the clause-final completive particle *ya* may also be shared over two clauses. Again, we see the object noun phrase omitted in the second clause:

- (285) *Sù bima ble d-akai, n-òu ya.*
 sago 2SG.POSS that 1SG-cut 1SG-eat COMP
 'I prepared that sago of yours, and ate [it].'

It is, of course, possible to link two monovalent clauses. The following sentence shows two clauses with a shared oblique nominal, appearing final in the chain of verbs:

- (286) *Dapu d-ele' d-iy wíysau pule.*
 1SG.NOM 1SG-go 1SG-sleep forest bush.camp
 'I went and slept in the bush camp.'

Another option for linking clauses involves the use of the sequential marker *-pa* (see also the texts in Chapter 7). This can be seen in the following textual extracts:

- (287) *D-ele' ásong-pa ni', tàu d-ei mi.*
 1SG-go stealthy-SEQ INTENSE noise 1SG-do NEG
 'I went along very stealthily, I didn't make any noise.'

- (288) *Dapu d-ele' pli-pa dapu wì d-akai, d-ele' wíysau.*
 1SG.NOM 1SG-go road-SEQ 1SG.NOM river 1SG-cross 1SG-go forest
 'I went along the road, then I crossed the river and went into the forest.'

A phonologically identical conjunction is found, with various uses, in Skou, Nyao and Wutung, genetically rather distantly related languages found to the immediate north-west and west of Krisa. The fact that the cognate conjunction shows a /p/ in Wutung and Nyao, where we would expect /tʃ/, and the lack of any evidence for this morpheme in any other related languages, points to some evidence for the spread of this morpheme involving diffusion rather than simple descent (Nyao also displays the case marker *-tʃi* in a role that *-pa* is found with in Skou, marking an instrument. This would be the expected cognate for a Proto Skou form *pV. Skou also has a light verb *fa* 'make use of', which might be cognate, but for which there is no comparative support).

Clauses marking purpose or reason are not marked in any particular way:

- (289) *Nana d-ele' ubiy n-afung, d-alai ya, wì.*
 1SG 1SG-go fish.poison 1SG-uproot 1SG-get.PL.OBJ COMP water
 'I went to pull out the fish poison roots, and when I'd collected them,
 (went to) the river.'
- (290) *Mama b-akai-na móu, nana wii-na.*
 2SG 2SG-wait-1SG not.exist 1SG 3SG.NM.do-1SG.DAT
 'If you wait for me, and I don't come, (it'll be because) I'm sick.'
 (lit. '(If) you wait for me, and there's no (result), (it'll be because) I'm
 sick.')

Sharing an argument between two verbs is also characteristic of serial verb constructions, and this is discussed in the following section.

6.6 Verb serialisation

Independent verbs may be used in serial verb constructions, provided that they show identical subject agreement, and the same specifications for polarity, aspect, etc. Serial verb constructions are common constructions in the languages of New Guinea, and their use in I'saka can be seen in the following example, which shows both manner-of-motion and simple change-of-location verbs serialised together, each with their own inflection for subject, necessarily agreeing (if there is overt agreement — the 3PL subject in (292) evokes no overt agreement on the verbs because these verbs take no agreement prefix for 3PL).

- (291) *A nuo k-aliè k-ele' ya.*
 pig.M big 3SG.M-flee 3SG.M-go COMP
 'The big pig ran away.'
- (292) *Dakau onde akane wíysau.*
 children go hide forest
 'The children went and hid in the bush.'

Note that this is an example in which the adjective (*nuo* 'big') appears adjacent to the noun rather than after the verb, despite the fact that no peripheral argument is present. This may be because of the presence of the completive particle, or because subject-linked adjectives cannot follow serialised verbs. However, from (293) we can see that an object-linked adjective may follow this sort of complex predicate. Note that in this sentence there is no completive particle.

- (293) *Yùng d-asa d-ei kaipa.*
 bird 1SG-carry 1SG-do one
 'I brought one bird.'

Object suffixes (and presumably dative suffixes) need only be marked on the second verb, as is shown in the verb series *-esi* 'carry' + *-epa* 'put' ('hold') in example (110), though this may be a result of the first verb not being eligible to take the highly restricted object marking (recall that only a small minority of verbs inflect for (non-dative) object in I'saka). Restrictions on the compulsory sharing of irrealis inflection for serial verbs (that is, whether one or both must be inflected) are not known.

Some predicates appear to be expressed only by means of what is formally a serial construction; these are described in §5.3.1 as dependent verbs.

A maximum of two verbs in series has been attested, though logically complex events of taking (carry, do, go) would be possible. Serial verb constructions of the type ‘cause + result’, exemplified by the Tok Pisin *Em i kilim man indai* ‘He hit the man dead’ have not, surprisingly, been noted in I’saka, where the most commonly attested serial verb constructions involve motion verbs serialising with either an elevational motion verb (‘go up’, ‘go down’) or a manner of motion verb (‘walk’, ‘run’).

- (294) *Tani' dina k-ele' k-ung wi'.*
 father 1SG.POSS 3SG.M-go 3SG.M-go.down sea
 ‘My father went down to the sea.’

A range of other examples of verb serialisation can be found in the texts in Chapter 7.

6.7 Verbs and the postposition *tro*

Coordinate clauses with the same subject in both may be linked using the postposition *tro*, already encountered in §5.1.2, as shown in:

- (295) *Nana d-ele' wang d-ei tro.*
 1SG 1SG-go song 1SG-do with
 ‘I walked and sang.’

In these cases the identity of the subject must be total. Note that sentence (296) is not permissible even though the subject of the conjoined verb (1SG) is included in the subject of the first clause (1DU):

- (296) **si-le wang d-ei tro*
 1DU-go song 1SG-do with
 ‘We two walked and I sang.’

When the subjects of the two clauses are different, they cannot be linked with *tro*, even if there is a logical connection between the two:

- (297) **nana sù n-òu wèi b-ei tro*
 1SG sago 1SG-eat language 2SG-do with
 ‘I ate sago and you talked.’
- (298) **nana sù n-omo m-òu tro*
 1SG sago 1SG-cook 2SG-eat with
 ‘I cooked sago and you ate (it).’

Instead, no overt linker is used:

- (299) *Nana sù n-omo, m-òu.*
 1SG sago 1SG-cook 2SG-eat
 ‘I cooked sago and you ate (it).’

We can see from these sentences that the use of the postposition *tro* serves a switch-reference function, monitoring the identity of subject (S, A) in the two clauses.

6.8 Relative clauses

Relative clauses follow the noun that they modify, and take the form of a clause with the head noun missing. There is no special marker of relativisation. Two examples of relative clauses in which the head of the relative clause is the object in that clause are shown below:

- (300) *Bala sù [b-akai] n-o-nòu.*
 tomorrow sago [2SG-cut] 1SG-eat-<IRR>
 ‘Tomorrow I’ll eat the sago that you’re making.’
- (301) *Sù [nana d-akai] amo m-òu?*
 sago.NM [1SG 1SG-cut] who QSG-eat
 ‘Who ate the sago that I prepared?’

The following example shows that the theme object of the verb may head the relative clause even when a dative argument is explicitly present on the verb:

- (302) *Pa [n-ani-ka] nuo mi.*
 bag [1SG-give-3SG.M.DAT] big NEG
 ‘The bag I gave him wasn’t big.’
 (this sentence, with a different intonation, is also grammatical with the reading ‘I didn’t give him a big bag.’)

In this example the adjective *nuo* is licensed to appear following the relative clause because it is not part of the NP headed by *pa*, but rather is the predicate of the clause.

7 *Texts*

The following texts are presented as examples of I'saka discourse in miniature.

7.1 Sago

This text explains part of the process of turning the pith of the sago tree into the sago flour that is the mainstay of the diet in Krisa, and most of lowlands New Guinea. This short text describes the process from the point that the sago tree has been felled and split open, up to the point of washing the sago flour.

- (1) *Bu'ru' d-ele' sù d-asá.*
now 1SG-go sago 1SG-scrape
'Now I'll go and scrape sago.'
- (2) *Sù d-asá papu'-ri.*
sago 1SG-scrape scraper-INSTR
'I scrape sago with the scraper.'
- (3) *Sùwa d-alai' d-akánu wasa.*
sago.shavings 1SG-get.PL.OBJ 1SG-fill blackpalm.basket
'I fill up a limbum basket with the sago shavings.'
- (4) *Depu sùwa d-ele' èing wolóu.*
1SG.NOM sago.shavings 1SG-go sago.washer place
'I take the sago shavings to the sago-washing place.'
- (5) *Depu sù d-owe.*
1SG.NOM sago 1SG-wash.sago
'I wash the sago.'
- (6) *Pùng dina' tù, di makaing wii.*
y.sibling 1SG.POSS 3SG.NM.come 1SG.ACC help 3SG.NM.do
'My little sister comes, she helps me.'

7.2 Hunt

This story is an abbreviated account of the process of hunting a cassowary and a pig. A large number of these flightless birds are found in the forests that cover the plateau on which Krisa is located, and they are a common source of fresh meat.

- (1) *Nana d-ele' wíysau.*
1SG 1SG-go forest
'I went to the forest.'
- (2) *D-ele' n-a-n(a)-pù. n-a-pù*
1SG-go 1SG-go.around-RED-? 1SG-go.around-?
'I walked around.'
- (3) *D-ele' ásong-pa ni', tàu d-ei mi.*
1SG-go stealthy-SEQ INTENSE noise 1SG-do NEG
'I went along very stealthily, I didn't make any noise.'
- (4) *Tàu d-ei, a dié k-e-kelei, a k-a-kali.*
noise 1SG-do pig.M 1SG.ACC 3SG.M-see-<IRR> pig.M 3SG.M-run-<IRR>
'If I made a noise, the pig would see me and run away.'
- (5) *Kasue d-o pái-ri.*
cassowary.M 1SG-do.M.OBJ arrow-INSTR
'I shot a cassowary with an arrow.'
- (6) *A d-o pái-ri.*
pig.M 1SG-do.M.OBJ arrow-INSTR
'I shot a pig with an arrow.'
- (7) *D-alai' d-àu wéi.*
1SG-get.PL.OBJ 1SG-come house
'I took them and came home.'
- (8) *N-omo tí'-ri, sù d-ái, n-òu.*
1SG-cook fire-INSTR sago 1SG-get 1SG-eat
'I cooked them in the fire, got some sago, and ate.'

Notes: We can see that a free pronoun is used in the first line of the text, and then reference to the 1SG narrator is by means of the verbal prefixes, except for the appearance of the accusative pronoun in (4). This is a normal proportion of free pronouns in I'saka.

7.3 Descriptions of the world

The following mini-texts are taken from a little I'saka picturebook *A, Yùng, Ú, Wè* [Animals, Birds, Fish, Insects] (Wou Wake et al. 2000). The texts were devised by Wou Wake and his family.

7.3.1 Wáus (prawns)

- (1) *Wáus w-ona su wì.*
prawn.NM 3SG.NM-sit be.at water
'The prawn lives in the water.'
- (2) *Téi yáu w-òung wì kóng.*
tree seed 3SG.NM-eat water under
'It eats seed down in the water.'
- (3) *Dù èi wì sokáing.*
sun good water smoke
'It's fine weather, the water evaporates.'
- (4) *Dou n-a-pu wáus n-asi.*
hand 1SG-hit-?? prawn 1SG-grab
'I put my hand in the water and grab the prawn.'

7.3.2 Wè (fish)

This description makes reference to an I'saka freshwater fishing practice, in which the fisher releases the sap of a particular vine into a pool. This poisons the fish and brings them floating to the surface downstream, where they are collected and taken home for eating.

- (1) *Wè ona su wì.*
fish 3SG.NM.sit 3SG.NM.be.at water
'Fish live in the water.'
- (2) *Ubuei d-akau,*
poison.vine 1SG-cut
'I get poison vine, ...'
- (3) *wè owai-ya ámopa.*
fish 3PL:die-COMP many
'many fish die.'
- (4) *D-alu-pa d-ele'-ya wéi.*
1SG.S-get-SEQ 1SG-go-COMP house
'I take them home.'
- (5) *N-amu ò-ri.*
1SG.S-cook pot-INSTR
'I cook them in a pot.'

7.4 Three little pigs

The following text was produced by a Krisa woman when asked to 'tell a story'. A number of interesting constructions can be seen in this text, notably the use of contrastive topic constructions in which the preclausal topic position is utilised to highlight the identity of

the topic, which is also commonly marked by the demonstrative *ble* 'that'. This can be seen most unambiguously in (12).

- (1) *A moni'*, ...
pig mother
'There was a mother pig, ...'
- (2) *a moni' w-isu nú.*
pig mother 3SG.NM-sit(?) animal.dwelling
'and (this) mother pig was at (her) home.'
- (3) *Dakau tro, dakau yúwe'.*
children with children three
'She had (her) three babies with her.'
- (4) *Dakau yúwe' yóu sokóung tro.*
children three stomach umbilical.cord with
'The three babies (still) had their umbilical cords attached.'
- (5) *Duwe abli!*
dog 3PL:chase
'And then, some dogs came running at (them)!'
- (6) *Duwe abli a moni' w-ili.*
dog 3PL:chase pig mother 3SG.NM-flee
'The dogs chased the mother pig away.'
- (7) *A moni' ble w-ili tei póing ya.*
pig mother that 3SG.NM-flee 3SG.NM.go far.away COMP
'That mother pig, she ran far away.'
- (8) *A dakau ble piplai, nuo-pa mi.*
pig children that tiny big-SEQ NEG
'Those piglets were tiny, they hadn't grown up at all.'
- (9) *Yóu sokóung tro!*
stomach umbilical.cord with
'Their umbilical cords were still attached!'
- (10) *Alai a dakau ble.*
3PL:take.3PL.OBJ pig children that
'The dogs got those piglets.'
- (11) *Alai alaru i'.*
3PL:take.3PL.OBJ 3PL.take.(?up).3PL.OBJ village
'The dogs got them and they took them up to the village.'
- (12) *A moni' duwe abli tei sepi ya.*
pig mother dog 3PL:chase 3SG.NM:go completely COMP
'The mother pig, the dogs had chased her and she'd completely taken off.'
- (13) *Tu wo mi.*
3SG.NM.come DUB NEG
'She probably won't come back.'

Notice the use of *-pa* on the adjective *nuo* in line (8). This is the only occurrence we have observed of the *-pa* affix appearing on an adjective that has also been observed without it. This implies that this is an instance of the sequential affix (see §6.5); if it is to be interpreted as an occurrence of the so-called frozen adjectival suffix described in §2.3.1, §4.1, §5.3.1, then we would have to assume that there is some degree of productivity still associated with the morpheme. It seems simpler to interpret this use of *-pa* as representing the sequential marker: the piglets were tiny, (assuming they were) big then (this was) not (the case).

8 Irregular verb paradigms

In Chapter 4 and 5, especially §5.2.2, we examined the set of verbal prefixes that mark subject on regular verbs. Despite this, a number of commonly used verbs have irregular suppletive forms. In this section we present a few sample paradigms of verbs to give the reader an impression of the irregular morphological processes as well as the regular ones.

The following verbs show regular, or semiregular, prefixation, but with irregular vowel suppletion. They are presented with the regular verb *akalou* ‘play’ for comparison.

Table 29: Irregular verbs

	Prefix	‘play’	‘come’	‘go’	‘eat’	‘drink’
1 SG	<i>d-</i>	<i>d-akalou</i>	<i>d-au</i>	<i>d-ele'</i>	<i>nòu</i>	<i>nosùng</i>
2 SG	<i>b-</i>	<i>b-akalou</i>	<i>b-au</i>	<i>b-ele'</i>	<i>mòu</i>	<i>mosùng</i>
3 SG.M	<i>k-</i>	<i>k-akalou</i>	<i>k-au</i>	<i>k-ele'</i>	<i>kòung</i>	<i>kosùng</i>
3 SG.NM	<i>w-/t-</i>	<i>w-akalou</i>	<i>tu</i>	<i>ti'</i>	<i>wòung</i>	<i>wusùng</i>
1 DU	<i>si-/s-</i>	<i>s-akalou</i>	<i>su</i>	<i>sile'</i>	<i>sòung</i>	<i>susùng</i>
2/3 DU	<i>s-</i>	<i>s-akalou</i>	<i>s-au</i>	<i>s-ele'</i>	<i>sòung</i>	<i>susùng</i>
1 PL	<i>di-</i>	<i>di-akalou</i>	<i>n-oru</i>	<i>d-ore'</i>	<i>nì</i>	<i>nusùng</i>
2 PL	<i>yi-/y-</i>	<i>y-akalou</i>	<i>y-oru</i>	<i>y-ore'</i>	<i>yìng</i>	<i>yusùng</i>
3 PL	<i>e-/Ø-</i>	<i>Ø-akalou</i>	<i>oru</i>	<i>onde'</i>	<i>òung</i>	<i>osùng</i>

‘hit’				‘go down’			
1 SG	<i>n-a</i>	1 PL	<i>di</i>	1 SG	<i>nù</i>	1 PL	<i>dì</i>
2 SG	<i>m-a</i>	2 PL	<i>yi</i>	2 SG	<i>mù</i>	2 PL	<i>yì</i>
3 SG.M	<i>k-ang</i>	3 PL	<i>ang</i>	3 SG.M	<i>kùng</i>	3 PL	<i>ùng</i>
3 SG.NM	(n/e)			3 SG.NM	<i>wùng</i>		
1 DU	<i>si</i>			1 DU	<i>sì</i>		
2/3 DU	<i>sa</i>			2/3 DU	<i>sù</i>		

See also the inflection of ‘sit’ described in §5.3.3, which exhibits the loss of nasalisation in the plural forms, a pattern that is fairly well attested in a variety of verbs (though not entirely; in ‘go’ above we can see the addition of a nasal morpheme in 3PL, which also strengthens intervocalic [r] to [d]). The annotation ‘n/e’ stands for ‘not elicited’.

The plural of the verb 'go' is found in two forms. In addition to, for instance, *yore'*, the form *ynore'* has also been recorded. The meaning difference, if any, between these two forms is not known. The similarity of the root for 'go' in I'saka to the cognate forms in Skou (*re*) makes it very likely that the apparently prefixal *in-* has historically borne some function, which might possibly have been lost, or else fused into the root, in the case of the 3PL form.

It is worth pointing out that some of the verb forms described here show some degree of multiple exponence of agreement marking for subject. This is particularly noticable with the verbs of going. For example, when the 2PL form of the verb is given as *ynore'*, the morphological breakdown of the verb must be something like the following:

- (303) *ynore'*
 yi-n-ore'
 2PL-PL-go.PL
 'You all went.'

The multiple marking of the same features, or subsets of the same set of features, at different points in a verb is common to other members of the Skou family (though it is by no means universal). It has been described in Skou (Donohue 1999b) and Barupu (Donohue 2003), and has also been observed, with pragmatic functions, in Puare (Donohue's fieldnotes, 2002).

9 *Comparison with related languages*

As mentioned in §1.3, there are no languages with a particularly close linguistic relationship to I'saka. Despite this lack of near siblings, I'saka is demonstrably a member of the Macro-Skou family, as has been seen in Figure 3, and numerous cognates and paradigmatic matches can be found with languages in other, more populous, branches of this family (see Donohue 2002a, to appear). In this section some of the similarities between I'saka and various of the other languages of the family will be described.

Recall from Figure 3 in §1.3 that I'saka is a first-order subgroup within the Macro-Skou family. As such, there are not many cognates with any one language from the other branch of Macro-Skou, but taken as a whole there are quite a few. Table 30 presents a non-exhaustive list of representative examples, with the non-I'saka words shown in IPA.

Table 30: Sample cognates between I'saka and other members of Macro-Skou

I'saka		Cognate	Language	Comments and tentative reconstructions
<i>tanu</i>	'head'	tū l̥u	Dumo Sumararu	*t̥l̥u[kɛ]; see §2.6.2 for a discussion of the epenthetic vowel in I'saka.
<i>ya</i>	'hair'	dā sī	Dumo Leitre	*jā is attested in I'saka and the Skou family only
<i>dapu</i>	'nose'	gu-wɛ nakū uʃɔ	Dusur Leitre Barupu	*[na]-k ^w ū. The bilabial realisation of the labiovelar series in I'saka is regular.
<i>kung</i>	'tooth'	kō kōni	Skou Leitre	As with 'hair', 'tooth' is cognate only with Skou family languages.
<i>dou</i>	'hand'	nɔ anɔ ɛnɔ	Skou Puare Barupu	*ɛ̄du is attested in all branches of Macro-Skou.
<i>you</i>	'stomach'	gu kiɛ	Leitre Womo	*g ^w ɛ ? Tentative reconstruction.
<i>se</i>	'liver'	sɛ sɛ	Puare Womo	*sɛ is attested only in I'saka and the (non-contiguous) Serra Hills family.
<i>si</i>	'blood'	hi ji	Skou Leitre	*hyi.

<i>sing</i>	‘urine’	hpa sqi k turu	Wutung Sumararu Barupu	*hyiC. Tentative.
<i>ou</i>	‘faeces’	he [b]-a a	Wutung Rawo Barupu	*h[ε/a/ɔ]. The initial b in Rawo is a regular historically epenthetic consonant.
<i>na-, di-</i>	‘1SG’	ni ana neni	Skou Puare Barupu	*ni. ¹ See the table of pronominal correspondences below.
<i>yùng</i>	‘bird’	ḡu ru	Womo Barupu	*rũ
<i>kùng</i>	‘egg’	ku ku	Skou Puare	*kũ. The *ũ is reconstructed based on the reflex in Skou. See Donohue (2002a).
<i>disi</i>	‘rat’	ʒapskε raβiβaw	Puare Nouri	Tentatively *ra-si, with irregularities in Nouri.
<i>ape</i>	‘pig’	pa da ḡæpε rau	Skou Dusur Womo Barupu	*ra-g ^w a. All developments are regular; again the labiovelar > labial change can be seen.
<i>kasue</i>	‘cassowary’	rũ si sjamb	Skou Dusur Rawo	*[ka]-sũ-amb
<i>wi</i>	‘water’	pa tʃa fi pi	Skou Wutung Puare Sumo	*g ^w i

(The use of ḡ in the Womo symbol [ḡ] indicates, as per IPA norms, that the sound is pronounced in a more front position than normal. The Womo sound varied between a laminodental approximant with friction, and a co-articulated palatal-dental approximant, with friction.)

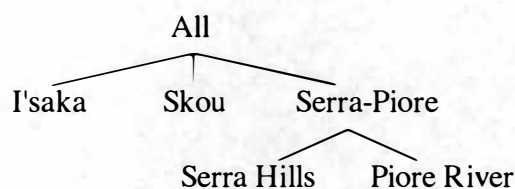
Comparing the pronominal systems of the languages, the following correspondences emerge; recall that Skou groups with Leitre, Puare with Womo, and Barupu with Sumo (see Figure 3). Bound forms have been compared where possible, though in most cases the consonant associated with the bound form is identical to that associated with the free form.

¹ There is some evidence to suggest that this pronoun might have been *ji at an earlier stage, but that depends on internal reconstructions from the Skou subfamily, and does not concern us here (for further details, see Donohue 2002a).

Table 31: Pronominal consonant correspondences

	I'saka	Skou	Leitre	Puare	Womo	Barupu	Sumo	
1SG	<i>n, d</i>	\emptyset, k, n	\emptyset, η	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	* <i>n</i> /* <i>\eta</i>
2SG	<i>m, b</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	* <i>m</i>
3SG.M	<i>k</i>	<i>k</i>	<i>k</i>	ζ	<i>k\emptyset</i>	<i>k, \emptyset</i>	\emptyset	* <i>k</i>
3SG.F	<i>w</i>	<i>p</i>	<i>g^w</i>	ζ	<i>z^w</i>	<i>w, \emptyset</i>	<i>u, \emptyset</i>	* <i>g^w</i>
1PL	<i>ni, di</i>	<i>n</i>	<i>n</i>	<i>b</i>	<i>b</i>	<i>m</i>	<i>p</i>	
2PL	<i>i</i>	\emptyset	\emptyset	<i>h</i>	<i>p</i>	<i>p</i>	<i>p, b</i>	* <i>p</i>
3PL	<i>e</i>	<i>t, y</i>	<i>d, y</i>	<i>p</i>	<i>kw</i>	<i>r</i>	<i>r, y</i>	* <i>r</i> /* <i>y</i>

There is a clear correspondence pattern in some forms, with the first and second person singular forms the most regular, along with the masculine. The feminine forms are innovative in Serra Hills languages, with a neuter gender spreading its function, and the first and second person plurals are suppletive in both Serra Hills and Piore River, the former grouping of which also has suppletive third person plural. Based just on this evidence we would want to group Serra Hills and Piore River together, against a Skou group, and I'saka as an isolate, as shown in Figure 10.

**Figure 10:** Subgrouping based on pronominal evidence

The regular sound changes, evidenced in part in the data seen in Table 30, are not clear enough to posit a subgroup that joins the Serra Hills and Piore River groups together, and so the tree presented in Figure 3 has shown these two groups, along with the Skou group, as sisters. On the other hand the phonological changes do suggest that I'saka forms a first-order subgroup within the family.

10 *Word lists and list of grammatical morphemes*

No lexicographic materials are available in popular print for the I'saka language, and it is unlikely that they will appear in the near future. Partly in order to counter this dearth of materials, we have included some word lists of the basic elements of the language.

We have presented a comprehensive basic word list in §10.1, followed in §10.2 by several lists of species names and natural world terms. These are words which have been recorded by Willy Wou Wake, of Krisa village. Some of these terms were not checked, and have been presented in Willy's orthography as he wrote it. These are listed in a different font, appearing sans serif: the word list that has been checked appears in *italics*, as a checked form, following the conventions used for transcribing other I'saka sentences in this book.

Following this is an alphabetically sorted list of these same words, and a short summary of the grammatical morphemes in the language, including references to where they are discussed.

10.1 Basic I'saka word list

The following list of basic lexemes is given as a guide to the lexical diversity of the language, and as an aid to comparative work. It is not intended to be exhaustive (nor is it), but it does contain a good deal of lexical material that is not accessible through other sources, and so represents a valuable contribution to studies of New Guinea languages.

The list has been arranged by semantic fields, and is intended to cover as much of a basic survey word list as possible, with these items appearing first within each semantic domain, followed by a selection of more specialised items. Verbs appear inflected for first person singular, with the prefix *d-* or, if the initial syllable of the verb root is nasalised, *n-* (§5.2.2), since this makes the representation of nasalisation in an initial syllable most simple. Where known, the gender of the noun has been indicated, with masculine nouns marked by 'M', and non-masculine marked with 'NM'. All examples appear in the orthography described in §2.7; the phonological forms may be reconstructed from these orthographic representations with no ambiguities.

The abbreviations used in the section on kin terms follow standard anthropological usage, and can be summarised as follows: C - child, D - daughter, e - elder, F - father, H - husband, M - mother, P - parent, S - son, Si - sibling, ss - same-sex, os - opposite sex, Sp - spouse, W - wife, y - younger, Z - sister. These may be used in combinations such that each operator applies to the following term. As an examples of this, the gloss CSp for *duwoko* indicates that the term can be used for a child's spouse. Some terms cover reference of what would be

conceived of as two separate categories in English, such as PP, CC *yani'*, which covers both grandparents (of either sex, thus in English both grandfather and grandmother) and grandchildren. Clearly the relevant characteristic in I'saka is that the referent is two generations removed from Ego.

The following word list is organised into the following categories (in order of presentation): Body parts, Humans and kin terms, Pronouns, Animals, Plants, Natural world, Human artefacts, Location, Colours, Counting, Properties, Verbs, Miscellaneous.

A – Body parts

1. head	<i>tanú</i>	35. knee	<i>tokóu</i>
2. hair	<i>yá</i>	36. back of knee	<i>ápuè</i>
3. forehead	<i>pana</i>	37. toe	<i>yàng nakáing</i>
4. face	<i>nípana</i>	38. big toe	<i>yàng moni'</i>
5. eye	<i>nakáing</i>	39. sole of foot	<i>yàng su'</i>
6. ear	<i>tariè</i>	40. body hair	<i>yá</i>
7. nose	<i>dapu</i>	41. skin	<i>tá</i>
8. cheek	<i>páung</i>	42. blood	<i>si'</i>
9. mouth	<i>nuwo, tuwo</i>	43. bone	<i>ye</i>
10. lip	<i>konóu</i>	44. flesh	<i>oung</i>
11. tooth	<i>kung</i>	45. urine	<i>sìng</i>
12. tongue	<i>mái</i>	46. faeces	<i>ou</i>
13. jaw	<i>weslé</i>		
14. neck	<i>wali'</i>	B – Human and kin terms	
15. collarbone	<i>pawi'</i>	1. man	<i>daka</i>
16. armpit	<i>dóula</i>	2. woman	<i>bu</i>
17. hand, arm	<i>dou</i>	3. H (husband)	<i>ini</i>
18. elbow	<i>dóu ninakou,</i> <i>dóu noròung</i>	4. W (wife)	<i>bua</i>
19. wrist	<i>dóu tòu</i>	5. M (mother)	<i>moni'</i>
20. palm	<i>dóu su'</i>	6. F (father)	<i>tani'</i>
21. thumb	<i>dóu moni'</i>	7. PP, CC	<i>yani'</i>
22. finger	<i>dóu nakáing</i>	8. PPP, CCC	<i>téte</i>
23. fingernail	<i>dóu noniè</i>	9. S (son)	<i>nài</i>
24. ribs	<i>pésie</i>	10. D (daughter)	<i>nù</i>
25. breast	<i>ni'</i>	11. C (plural)	<i>dakau</i>
26. flank	<i>wèngpi</i>	12. CSp	<i>duwoko</i>
27. back	<i>káwe'</i>	13. eSi	<i>ba'</i>
28. spine	<i>káuye</i>	14. ySi	<i>pung</i>
29. stomach	<i>yóu</i>	15. yB	<i>pai</i>
30. tummy button	<i>you emi</i>	16. B (brother)	<i>mini</i>
31. liver	<i>sè</i>	17. Z (sister)	<i>bupu</i>
32. hip	<i>yelié</i>	18. (P)SiSp(P), Sp(Si, osP), CSpP (= SiSp, SpSi, HF, WM, PSiSp, CSpP, SiSpP)	<i>kawi</i>
33. bottom	<i>kani</i>		
34. leg	<i>yàng</i>		

19.	WF, HM	<i>sami</i>	21.	cuscus (yellow and black)	<i>amakaing</i>
20.	FeB, MeZH	<i>tani ba'</i>	22.	cuscus (brown)	<i>asuwou</i>
21.	FyB, MyZH	<i>tani pung</i>	23.	cuscus (white)	<i>alabuwa</i>
22.	MeZ, FeBW	<i>moni ba'</i>	24.	cuscus (small)	<i>arú</i>
23.	MyZ, FyBW	<i>moni pung</i>	25.	fly	<i>a'ng</i>
24.	FZ, MB	<i>wini</i>	26.	hornbill	<i>yàkanu</i>
25.	FZH, MBW	<i>ongni</i>	27.	cockatoo	<i>yéing</i>
26.	twins ('bear two')	<i>terei sie</i>	28.	crowned pigeon	<i>niàkanu'</i>

C – Pronouns

1.	I	<i>nana</i>	30.	bird of paradise	<i>yánuai</i>
2.	you	<i>mama</i>	31.	owl	<i>yéri</i>
3.	he	<i>kia</i>	32.	chicken (loan, < tok pisin)	<i>yùng-paul</i>
4.	she	<i>umu</i>	33.	frog (green)	<i>pe'wel</i>
6.	we (PL)	<i>numu</i>	34.	frog	<i>pewá</i>
7.	you (PL)	<i>yumu</i>	35.	frog (large, edible)	<i>sokonou</i>
8.	they (PL)	<i>ie</i>	36.	frog	<i>sakaing</i>
9.	we (DU)	<i>nesing</i>	37.	frog (small)	<i>ko'kwai</i>
10.	you (DU)	<i>isang</i>	38.	tree kangaroo	<i>arisi, bau</i>
11.	they (DU)	<i>esang</i>	39.	wallaby	<i>asang</i>

D – Animals

1.	bird	<i>yùng</i>	40.	bandicoot	<i>ilài</i>
2.	egg	<i>kùng</i>	41.	bandicoot (sp.)	<i>bi'fo</i>
3.	rat	<i>disi'</i>	42.	bandicoot (small)	<i>bi'sup</i>
4.	dog	<i>duwe</i>	43.	bandicoot (sp.)	<i>bi'yàu</i>
5.	pig	<i>a</i>	44.	ant	<i>makaingko</i>
6.	fish	<i>wè</i>	45.	centipede	<i>wàu</i>
7.	prawn	<i>wáus</i>	46.	dragonfly	<i>susuwáng</i>
8.	turtle	<i>alié</i>	47.	grasshopper	<i>asóng</i>
9.	snake	<i>wòung wapi'</i>	48.	beetle	<i>asakáu</i>
10.	goanna	<i>kása</i>	49.	cockroach	<i>pile</i>
11.	lizard	<i>waying</i>	50.	spider	<i>amamú</i>
12.	killer lizard	<i>wurowal</i>	51.	butterfly	<i>apá</i>
13.	worm	<i>alui</i>	52.	sago grub	<i>bábol</i>
14.	mosquito	<i>wakalí</i>	E – Plants		
15.	louse	<i>ei'ng</i>	1.	tree	<i>téi</i>
16.	leech	<i>ana'</i>	2.	branch	<i>tei óu</i>
17.	crocodile	<i>wàlpi, walepi'</i>	3.	trunk	<i>tei péi</i>
18.	cassowary	<i>kasue</i>	4.	bark	<i>tei tá</i>
19.	cuscus (yellow, black and white)	<i>aluwái</i>	5.	leaf	<i>séi</i>
20.	cuscus (black-tailed)	<i>asakoi</i>			

6.	leaf (suitable for a plate)	<i>sáng</i>
7.	thorn	<i>dá</i>
8.	seed	<i>yáu</i>
9.	flower	<i>dì'pop</i>
10.	betel nut	<i>pung</i>
11.	betel pepper	<i>pol</i>
12.	coconut	<i>sòng</i>
13.	green coconut	<i>sòng takalo</i>
14.	brown coconut	<i>sòng slau</i>
15.	banana	<i>wìng</i>
16.	salt	<i>wi'</i>
17.	cassava	<i>aingpo</i>
18.	sago tree	<i>sù</i>
19.	crown of sago tree	<i>sù pàli</i>
20.	outer trunk	<i>sù dóu</i>
21.	pith	<i>sù su'</i>
22.	base	<i>sù elì</i>
23.	spine of palm frond	<i>sù káuwe'</i>
24.	sago 1 (thorny)	<i>sù suwàse</i>
25.	sago 2	<i>sù subu'bo</i>
26.	sago 3 (thorny)	<i>sù sakalú</i>
27.	sago 4 (thorny)	<i>sù suakana</i>
28.	sago 5	<i>sù sìpu'</i>
29.	sago 6	<i>sù sau</i>
30.	sago 7	<i>sù suléi</i>
31.	sago 8	<i>sù apsau</i>
32.	sago 9 (thorny)	<i>sù siyòu</i>
33.	sago flour	<i>sù die</i>
34.	sago porridge	<i>wulié</i>
35.	baked sago	<i>trà</i>
36.	rice	<i>blasi</i>
37.	fish poison roots	<i>ubuei, ubiy</i>
38.	grass	<i>susup</i>
39.	root	<i>pòu</i>
40.	lime	<i>pi'sa</i>
41.	breadfruit	<i>nopòng</i>
42.	taro	<i>opsuwe, duku</i>
43.	tulip	<i>wesie</i>
44.	fern (edible)	<i>wasai</i>
45.	blackpalm	<i>así</i>

F – Natural world

1.	soil	<i>dúwe'</i>
2.	stone	<i>yoko</i>
3.	sand	<i>pupo'</i>
4.	beach	<i>wi'pupo'</i>
5.	water, river	<i>wì</i>
6.	sea	<i>wi'</i>
7.	cloud	<i>kòu</i>
8.	rain	<i>pì</i>
9.	raindrop	<i>pisa</i>
10.	wind	<i>tèng</i>
11.	sun	<i>dù</i>
12.	moon	<i>àu</i>
13.	night	<i>(po)kisi</i>
14.	star	<i>yelie</i>
15.	fire	<i>ti'</i>
16.	smoke	<i>ti' ume</i>
17.	ashes	<i>ti' sòu</i>
18.	forest	<i>pù, wíysau</i>
19.	mountain	<i>i'tanu</i>
20.	valley	<i>isèi</i>

G – Human artefacts

1.	garden	<i>pili</i>
2.	house	<i>wéi</i>
3.	bush house	<i>wéi yàu</i>
4.	main crossbeam (floor)	<i>tú</i>
5.	struts to support floorboards	<i>takalau</i>
6.	floorboards	<i>así diyakau</i>
7.	pile, stilt	<i>yomunó, yokonò</i>
8.	step	<i>tupo</i>
9.	roof (sago fronds)	<i>usu</i>
10.	roofbeam	<i>káu</i>
11.	door	<i>topu</i>
12.	bed, platform	<i>tapa</i>
13.	rope	<i>bei</i>
14.	pot	<i>ò</i>
15.	frying-pan (double)	<i>sakale</i>
16.	tongs (bamboo)	<i>dipi</i>
17.	blackpalm basket	<i>wasá</i>
18.	blackpalm basket	<i>sinai</i>

19.	blackpalm broom	<i>así kos</i>
20.	blackpalm container (small)	<i>kolou</i>
21.	machete	<i>nabi</i>
22.	axe	<i>dawa</i>
23.	bow	<i>yèi</i>
24.	bowstring	<i>yèi yi</i>
25.	arrow	<i>pái</i>
26.	bamboo arrow	<i>wolu</i>
27.	arrow head	<i>aing</i>
28.	three-prong	<i>fai a'mu'</i>
29.	arrow shaft	<i>bóu</i>
30.	knife	<i>nina</i>
31.	knife handle	<i>nina takang</i>
32.	knife edge	<i>nini</i>
33.	back of knife	<i>nina káwe'</i>
34.	cloth (loan, < tok pisin <i>laplap</i>)	<i>apla</i>
35.	baby sling	<i>páing</i>
36.	net bag	<i>pa</i>
37.	pegs	<i>akau tana</i>
38.	meat-drying rack	<i>kulei</i>
39.	fence	<i>yól, kop</i>
40.	village	<i>i'</i>
41.	path/road	<i>plèi, pìlì</i>

H – Location

1.	this, here	<i>blo</i>
2.	that, there	<i>ble</i>
3.	inside	<i>tro, tru</i>
4.	outside	<i>dúwe'</i>
5.	left	<i>dóu akai</i>
6.	right	<i>dóu nini</i>
7.	here	<i>bisi</i>
8.	above	<i>tre</i>
9.	below	<i>kóng</i>
10.	in front	<i>nini</i>
11.	back	<i>káwe', káye</i>

I – Colours

1.	black	<i>kisuko</i>
2.	white	<i>irei</i>
3.	red	<i>wái</i>
4.	yellow	<i>yapupe</i>

5.	blue, green	<i>yabu</i>
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J – Counting

1.	one	<i>kaipa</i>
2.	two	<i>sie</i>
3.	three	<i>sie kaipa, yúwe'</i>
4.	four	<i>sie sie, dóu nakáing</i>
5.	five	<i>sie sie kaipa, dóu keni pa. dóu ble pa</i>
6.	six	<i>dóu keni(ki) bai kaipa</i>
7.	seven	<i>dóu keni(ki) bai sie</i>
8.	ten	<i>dóu sie, dóu kekéni</i>
9.	all, lots, three	<i>yúwe', yúwa'</i>
10.	many	<i>ámopa</i>
11.	some	<i>ese</i>

K – Properties

1.	big	<i>nuo</i>
2.	small	<i>nakau</i>
3.	tiny, very young	<i>piplai</i>
4.	old (things)	<i>tuni</i>
5.	new	<i>ino</i>
6.	hot	<i>ma takau</i>
7.	hot, fresh	<i>takau(-DAT)</i>
8.	cold	<i>akanu</i>
9.	good	<i>èi</i>
10.	bad	<i>plai(-DAT)</i>
11.	near	<i>yop-lu</i>
12.	far	<i>ino-pa póing</i>
13.	wet	<i>wiy</i>
14.	dry	<i>slau</i>
15.	long	<i>wolow</i>
16.	short	<i>áu-pa</i>
18.	heavy	<i>taka</i>
19.	sick	<i>wii(-DAT)</i>
20.	sharp	<i>ni(sako)</i>
21.	blunt	<i>tóu</i>
22.	ripe, ready, red	<i>wái</i>

23. stealthy	<i>asong-pa</i>	35. shoot (=‘do’)	<i>do</i>
24. quick	<i>ple-pa</i>	36. cough	<i>dakai wii-DAT</i>
L – Verbs			
1. see	<i>delei</i>	37. flee	<i>dali</i>
2. hear	<i>daluwe</i>	38. call (someone)	<i>nanu(-DAT)</i>
3. know	<i>delei</i>	39. follow (someone)	<i>ni nana(-DAT)</i>
	<i>save dei</i>	40. go down	<i>nù</i>
4. speak	<i>daka</i>	41. carry	<i>dasa-(H.OBJ)</i>
5. afraid	<i>ubue(-DAT)</i>	42. carry on shoulder	<i>dopa</i>
6. be.at	<i>nu ~ lu</i>	43. cut	<i>dakai</i>
7. be.at	<i>nu ~ ku</i>	44. get, take	<i>dai</i>
8. sleep	<i>diy</i>	45. wrap (pl.obj)	<i>dakale</i>
9. sit	<i>nana nu</i>	46. chase	<i>dabli</i>
10. stand	<i>nana lu</i>	47. clap	<i>dóu dei</i>
11. walk	<i>dele' yang-ri</i>	48. open	<i>dala</i>
12. run	<i>nanire</i>	49. make wet, soak, dampen, moisten	<i>na</i>
13. fly	<i>daiya</i>	50. uproot	<i>dapung</i>
14. wash (cloth)	<i>pi' dape</i>	51. scrape (sago)	<i>dasá</i>
15. scratch	<i>ta' daka(-DAT)</i>	52. fill (tr)	<i>dakánu</i>
16. hold	<i>dapu</i>	53. rinse (sago)	<i>dowe</i>
17. tie	<i>dakai</i>	54. help	<i>makaing dei</i>
18. stab (=‘do’)	<i>do</i>	55. sharpen	<i>dakala</i>
19. wash (self)	<i>wì debuwe</i>	56. hide (intr/tr)	<i>dakane</i>
20. wash (someone)	<i>wì debuwe-DAT</i>	57. blow (fire)	<i>debi</i>
21. eat	<i>nòu</i>	58. burn (tr)	<i>dasi</i>
22. drink	<i>nasùng, nosùng</i>	59. be angry	<i>nàni dei</i>
23. die (pl)	<i>owai</i>	60. plant	<i>duwai</i>
24. kill (=‘do’)	<i>dei</i>	61. split	<i>nonu</i>
25. give	<i>nani-DAT</i>	62. tell (someone)	<i>dapu-DAT</i>
26. come	<i>dau</i>	63. cover	<i>dapuwe</i>
27. go	<i>dele'</i>	64. pick up	<i>dai dóu-ri</i>
28. laugh	<i>suwe dusue</i>	65. smell	<i>po dai</i>
29. be strong (man) ¹	<i>kali dei</i>	66. close (tr)	<i>dasuwe</i>
30. sing	<i>wang dei</i>	67. smoke (tobacco)	<i>sokaing dei</i>
31. roast	<i>nomo</i>	68. teach (someone)	<i>lainim dei(-DAT)</i>
32. hit	<i>na</i>	69. learn	<i>save dei(-ya)</i>
33. put, throw	<i>depe</i>	70. debone, remove stem	<i>tàng dei</i>
34. search for	<i>dakai do</i>	71. light (sun lights the world, person starts a fire)	<i>nanai</i>
		72. light (a fire)	<i>du kanai, ti' nanai</i>
		73. broken	<i>pi</i>

¹ Although describing a property, this is formally a verb with an adjunct nominal, and so has been listed in this section.

M – Miscellaneous

1. yes	<i>ingke</i>	10. today	<i>buru</i>
2. no/not	<i>mi</i>	11. tomorrow	<i>bala</i>
3. don't	<i>ni</i>	12. soon	<i>molei</i>
4. there is none	<i>mòu</i>	13. who?	<i>amo</i>
5. language	<i>wèi</i>	14. what?	<i>kaung</i>
6. name	<i>tá</i>	15. where?	<i>ta' ri, sulu</i>
7. clan, line	<i>bulakau</i>	16. when	<i>kaung ri</i>
8. traditions	<i>bulawèi</i>	17. why, how	<i>daka</i>
9. yesterday	<i>kelie</i>	18. like this	<i>sani</i>

10.2 Wou Wake's supplementary lists

In addition to the general lexical materials presented above, the following specific species names are shown. Much of the material in these lists has not been checked, but has been included in the interests of making a more complete record available to a wider audience, as the future of further lexicographic work on the language is not certain. In some cases the words have already appeared in the lists above; they have been repeated in Wou Wake's lists to give an accurate record of the words that he felt it necessary to include. Many of the following words show unusual phonotactic patterns, possibly reflecting loans (see §2.6.1). It should be noted that Wou uses *f* and *p* interchangeably; those forms that have been heard show the same alternations that are found elsewhere in the language, and which we represent simply with *p*.

Animals

1. fly	ang	M	20. frog	pewel	NM
2. turtle	alie	NM	21. dragonfly	susuwang	NM
3. worm	alui	NM	22. mosquito	wakali	NM
4. possum	aluwai	M	23. crocodile	walepi	NM
5. leech	ana	M	24. centipede	wau	NM
6. butterfly	apa	NM	25. prawn	waus	NM
7. pig	ape	M	26. fish	we	?
8. tree kangaroo	aresi	M	27. wasp	wing dido	M
9. beetle	asakau	M?	28. diamond	woung wapi	NM
10. wallaby	asang	M	python		
11. grasshopper	asong	NM	29. hornbill	yakanu	M
12. sago grub	babol	?	30. bird of	yanuai	NM [†]
13. rat	disi	M	paradise		
14. dog	duwe	?	31. cockatoo	yeing	NM
15. bandicoot	ilai	M	32. owl	yerei	NM
16. cassowary	kasue	NM	33. magpie	yenui	M
17. lizard	kasa	NM			
18. ant	makainko	M			
19. bush pigeon	niakanu	NM			

† Different species of birds of paradise are assigned different genders.

Almost all the tree species listed below have not been translated, due to the difficulty of checking a tree's classification. Three trees were described by Wou Wake in Tok Pisin as being 'smel diwai' (= a fragrant tree), and 'kalpuluw' and 'harima' (the translation of which is unknown to us). In addition, the high number of words beginning with *ti-*, and *su-*, probably reflecting a complex morphological composition, with *ti-* representing *téi* 'tree', and *su-* representing *sù* 'sago (tree)'.

<i>Trees</i>		33.	pulu
1.	akautanu	34.	pupef
2.	arlu	35.	sapieyak
3.	asie	36.	sauwie
4.	au	37.	siel
5.	aurup	38.	subulo
6.	borepe	39.	suko
7.	busue	40.	suwe
8.	'smel diwai' dibej	41.	suwel
9.	disa	42.	suwudru
10.	dudles	43.	tam
11.	fase	44.	tami
12.	fuck	45.	tila
13.	haie	46.	tilip
14.	kapla	47.	tinan
15.	kilya	48.	tipulup
16.	kisei	49.	tiru
17.	kol	50.	tirue
18.	kukul	51.	tiwie
19.	'kalpuluw' kupof	52.	tiya
20.	maha	53.	tupowo
21.	mani	54.	turo
22.	momo	55.	waie
23.	muwek	56.	wal
24.	neraka	57.	waruwau
25.	nesa	58.	wasu
26.	ninad	59.	wolou
27.	nisa	60.	womo
28.	nisei	61.	yakuwa
29.	nue	62.	yaluw
30.	onokou	63.	yamiyo
31.	pillie	64.	yapal
32.	pufol	65.	'harima' yaulu

10.3 I'saka–English finderlist

The following finderlist includes both the materials in the standard word list and Wou Wake's supplementary lists, arranged alphabetically by the I'saka word. The same typographic conventions that have been used in the above lists to separate the checked and non-checked materials have also been employed here, with *italicised* font showing checked forms, and sans serif forms indicating material attested through written lists only.

<i>a</i>	pig	<i>áupa</i>	short
<i>a'ng</i>	fly	aurup	tree (species)
<i>aing</i>	arrowhead	<i>ba'</i>	eSi
<i>aingpo</i>	cassava	<i>bábol</i>	sago grub
<i>akanu</i>	cold	<i>bala</i>	tomorrow
<i>akau tana</i>	pegs	<i>bau</i>	tree kangaroo
<i>akautanu</i>	tree (species)	<i>bei</i>	rope
<i>alabuwa</i>	cuscus (white)	<i>bi'fo</i>	bandicoot (species)
<i>alié</i>	turtle	<i>bi'sup</i>	bandicoot (small)
<i>alui</i>	worm	<i>bi'yàu</i>	bandicoot (species)
<i>aluwái</i>	cuscus (species)	<i>bisi</i>	here
<i>amakaing</i>	cuscus (species)	<i>blasi</i>	rice
<i>amamú</i>	spider	<i>ble</i>	that, there
<i>amo</i>	who?	<i>blo</i>	this, here
<i>ámopa</i>	many	borepe	tree (species)
<i>ana'</i>	leech	<i>bóu</i>	arrow shaft
<i>ang</i>	fly	<i>bu</i>	woman
<i>apá</i>	butterfly	<i>bua</i>	wife
<i>ape</i>	pig	<i>bulakau</i>	clan, line
<i>apla</i>	cloth	<i>bulawèi</i>	traditions
<i>ápuè</i>	back of knee	<i>bupu</i>	sister
<i>aresi</i>	tree kangaroo	<i>buru</i>	today
<i>arisi</i>	tree kangaroo	busue	tree (species)
<i>arlu</i>	tree (species)	<i>dá</i>	thorn
<i>arú</i>	cuscus (small)	<i>dabli</i>	chase
<i>asakáu</i>	beetle	<i>dai</i>	get
<i>asakoi</i>	cuscus (species)	<i>dai dóu-ri</i>	pick up
<i>asang</i>	wallaby	<i>daiya</i>	fly
<i>así</i>	blackpalm	<i>daka</i>	man
<i>así diyakau</i>	floorboards	<i>daka</i>	why, how
<i>así kos</i>	blackpalm broom	<i>daka</i>	speak
<i>asie</i>	tree (species)	<i>dakai</i>	tie
<i>asóng</i>	grasshopper	<i>dakai</i>	cut
<i>asongpa</i>	stealthy	<i>dakai do</i>	search for
<i>asuwou</i>	cuscus (brown)	<i>dakai wii</i>	cough
<i>au</i>	tree (species)	<i>dakala</i>	sharpen
<i>àu</i>	moon	<i>dakale</i>	wrap

<i>dakane</i>	hide (IN/TR)	<i>dóu ninakou</i>	elbow
<i>dakánu</i>	fill (TR)	<i>dóu nini</i>	right
<i>dakau</i>	children	<i>dóu noniè</i>	fangernail
<i>dala</i>	open	<i>dóu noròung</i>	elbow
<i>dali</i>	flee	<i>dóu sie</i>	ten
<i>daluwe</i>	hear	<i>dóu su'</i>	palm
<i>dapu</i>	nose	<i>dóu tòu</i>	wrist
<i>dapu</i>	hold	<i>dóula</i>	armpit
<i>dapu</i>	tell (someone)	<i>dowe</i>	rinse (sago)
<i>dapung</i>	uproot	<i>du kanai</i>	light
<i>dapuwe</i>	cover	<i>dù</i>	sun
<i>dasá</i>	scrape (sago)	<i>dudles</i>	tree (species)
<i>dasa</i>	carry	<i>duku</i>	taro
<i>dasi</i>	burn (TR)	<i>duwai</i>	plant
<i>dasuwe</i>	close (TR)	<i>duwe</i>	dog
<i>dau</i>	come	<i>dúwe'</i>	soil
<i>dawa</i>	axe	<i>dúwe'</i>	outside
<i>debi</i>	blow (fire)	<i>duwoko</i>	CSp
<i>dei</i>	do	<i>èi</i>	good
<i>dele'</i>	go	<i>ei'ng</i>	louse
<i>dele' yang-ri</i>	walk	<i>esang</i>	they (DU)
<i>delei</i>	see, know	<i>ese</i>	some
<i>depe</i>	put	<i>fai a'mu'</i>	three-prong arrow
<i>di'pop</i>	flower	<i>fase</i>	tree (species)
<i>dibei</i>	tree ('smel diwai')	<i>fuck</i>	tree (species)
<i>dipi</i>	tongs (bamboo)	<i>haie</i>	tree (species)
<i>disa</i>	tree (species)	<i>i'</i>	village
<i>disi'</i>	rat	<i>i'tanu</i>	mountain
<i>diy</i>	sleep	<i>ie</i>	they (PL)
<i>do</i>	do	<i>ilài</i>	bandicoot
<i>dopa</i>	carry on shoulder	<i>ingke</i>	yes
<i>dou</i>	hand, arm	<i>ini</i>	husband
<i>dóu akai</i>	left	<i>ino</i>	new
<i>dóu ble pa</i>	five	<i>inopa</i>	far
<i>dóu dei</i>	clap	<i>irei</i>	white
<i>dóu kekéni</i>	ten	<i>isang</i>	you (DU)
<i>dóu keni pa</i>	five	<i>isèi</i>	valley
<i>dóu keni(ki) bai</i>	six	<i>kaipa</i>	one
<i>kaipa</i>		<i>kali dei</i>	be strong
<i>dóu keni(ki) bai sie</i>	seven	<i>kani</i>	bottom
<i>dóu moni'</i>	thumb	<i>kapla</i>	tree (species)
<i>dóu nakáing</i>	finger	<i>kasa</i>	lizard
<i>dóu nakáing</i>	four	<i>kása</i>	goanna

<i>kasue</i>	cassowary	<i>na</i>	make wet
<i>káu</i>	roofbeam	<i>nabi</i>	machete
<i>kaung</i>	what?	<i>nài</i>	son
<i>kaung ri</i>	when	<i>nakáing</i>	eye
<i>káuye</i>	spine	<i>nakau</i>	small
<i>káwe'</i>	back	<i>nana</i>	I
<i>kawi</i>	brother-in-law	<i>nana lu</i>	stand
<i>káye</i>	back	<i>nana nu</i>	sit
<i>kelie</i>	yesterday	<i>nanai</i>	light
<i>kia</i>	he	<i>nàni dei</i>	be angry
<i>kilya</i>	tree (species)	<i>nani</i>	give
<i>kisei</i>	tree (species)	<i>nanire</i>	run
<i>kisi</i>	night	<i>nanu</i>	call (someone)
<i>kisuko</i>	black	<i>nasùng</i>	drink
<i>ko'kwai</i>	frog (small)	<i>neraka</i>	tree (species)
<i>kol</i>	tree (species)	<i>nesa</i>	tree (species)
<i>kolou</i>	container	<i>nesing</i>	we (DU)
<i>kóng</i>	below	<i>nì</i>	don't
<i>konóu</i>	lip	<i>ni nana</i>	follow (someone)
<i>kòu</i>	cloud	<i>ni'</i>	breast
<i>kukul</i>	tree (species)	<i>ni(sako)</i>	sharp
<i>kulei</i>	rack	<i>niàkanu'</i>	crowned pigeon
<i>kung</i>	tooth	<i>nina</i>	knife
<i>kùng</i>	egg	<i>nina káwe'</i>	back of knife
<i>kupof</i>	tree ('kalpuluw')	<i>nina takang</i>	knife handle
<i>lainim dei</i>	teach (someone)	<i>ninad</i>	tree (species)
<i>ma</i>	hot	<i>nini</i>	knife edge
<i>maha</i>	tree (species)	<i>nini</i>	in front
<i>mái</i>	tongue	<i>nípana</i>	face
<i>makaing dei</i>	help	<i>nisa</i>	tree (species)
<i>makaingko</i>	ant	<i>nisei</i>	tree (species)
<i>mama</i>	you	<i>nomo</i>	roast
<i>mani</i>	tree (species)	<i>nonu</i>	split
<i>mi</i>	no/not	<i>nopòng</i>	breadfruit
<i>mini</i>	brother	<i>nosùng</i>	drink
<i>molei</i>	soon	<i>nòu</i>	eat
<i>momo</i>	tree (species)	<i>nu ~ ku ~ lu</i>	be.at
<i>moni ba'</i>	MeZ, FeBW	<i>nù</i>	daughter
<i>moni pung</i>	MyZ, FyBW	<i>nù</i>	go down
<i>moni'</i>	mother	<i>nue</i>	tree (species)
<i>mòu</i>	there is none	<i>numu</i>	we (PL)
<i>muwek</i>	tree (species)	<i>nuo</i>	big
<i>na</i>	hit	<i>nuwo</i>	mouth

<i>ò</i>	pot	<i>sakale</i>	frying-pan (double)
<i>ongni</i>	FZH, MBW	<i>sami</i>	WF, HM
<i>onokou</i>	tree (species)	<i>sáng</i>	leaf (suitable for a plate)
<i>opsuwe</i>	taro	<i>sani</i>	like this
<i>ou</i>	faeces	<i>sapieyak</i>	tree (species)
<i>oung</i>	flesh	<i>sauwie</i>	tree (species)
<i>owai</i>	die (PL)	<i>save dei</i>	know
<i>pa</i>	net bag	<i>save dei ya</i>	learn
<i>pai</i>	yB	<i>sè</i>	liver
<i>pái</i>	arrow	<i>séi</i>	leaf
<i>páing</i>	baby sling	<i>si'</i>	blood
<i>pana</i>	forehead	<i>sie</i>	two
<i>páung</i>	cheek	<i>sie kaipa</i>	three
<i>pawi'</i>	collarbone	<i>sie sie</i>	four
<i>pe'wel</i>	frog (green)	<i>sie sie kaipa</i>	five
<i>pésie</i>	ribs	<i>siel</i>	tree (species)
<i>pewá</i>	frog	<i>sinai</i>	blackpalm basket
<i>pi</i>	broken	<i>sìng</i>	urine
<i>pì</i>	rain	<i>slau</i>	dry
<i>pi' dape</i>	wash (cloth)	<i>sokaing dei</i>	smoke (tobacco)
<i>pi'sa</i>	lime	<i>sokonou</i>	frog (species)
<i>pile</i>	cockroach	<i>sòng</i>	coconut
<i>pili</i>	garden	<i>sòng slau</i>	brown coconut
<i>pìli</i>	path/road	<i>sòng takalo</i>	green coconut
<i>pillie</i>	tree (species)	<i>sù</i>	sago tree
<i>piplai</i>	tiny	<i>sù apsau</i>	sago 8
<i>pisa</i>	raindrop	<i>sù die</i>	sago flour
<i>plai</i>	bad	<i>sù dóu</i>	outer trunk
<i>ple-pa</i>	quick	<i>sù èli</i>	base
<i>plèi</i>	path/road	<i>sù káuwe'</i>	spine of palm frond
<i>po dai</i>	smell	<i>sù pàli</i>	crown of sago tree
<i>póing</i>	far	<i>sù sakalú</i>	sago 3 (thorny)
<i>pokisi</i>	night	<i>sù sau</i>	sago 6
<i>pol</i>	betel pepper	<i>sù sipu'</i>	sago 5
<i>pòu</i>	root	<i>sù siyòu</i>	sago 9 (thorny)
<i>pù</i>	forest	<i>sù su'</i>	pith
<i>pufol</i>	tree (species)	<i>sù suakana</i>	sago 4 (thorny)
<i>pulu</i>	tree (species)	<i>sù subu'bo</i>	sago 2
<i>pung</i>	ySi	<i>sù suléi</i>	sago 7
<i>pung</i>	betel nut	<i>sù suwàse</i>	sago 1 (thorny)
<i>pupef</i>	tree (species)	<i>subulo</i>	tree (species)
<i>pupo'</i>	sand	<i>suko</i>	tree (species)
<i>sakaing</i>	frog		

<i>sulu</i>	where?	<i>topu</i>	door
<i>susup</i>	grass	<i>tóu</i>	blunt
<i>susuwang</i>	dragonfly	<i>trà</i>	baked sago
<i>susuwáng</i>	dragonfly	<i>tre</i>	above
<i>suwe</i>	tree (species)	<i>tro, tru</i>	inside
<i>suwe dusue</i>	laugh	<i>tú</i>	crossbeam
<i>suwel</i>	tree (species)	<i>tuni</i>	old
<i>suwudru</i>	tree (species)	<i>tupo</i>	step
<i>tá</i>	skin, name	<i>tupowo</i>	tree (species)
<i>ta' daka</i>	scratch	<i>turo</i>	tree (species)
<i>ta' ri</i>	where?	<i>tuwo</i>	mouth
<i>taka</i>	heavy	<i>ubiy</i>	fish poison roots
<i>takalau</i>	support struts	<i>ubue</i>	afraid
<i>takau</i>	hot	<i>ubuei</i>	fish poison roots
<i>tam</i>	tree (species)	<i>umu</i>	she
<i>tami</i>	tree (species)	<i>usu</i>	roof (sago fronds)
<i>tàng dei</i>	debone	<i>wái</i>	red
<i>tani ba'</i>	FeB, MeZH	<i>wái</i>	ripe
<i>tani pung</i>	FyB, MyZH	<i>waie</i>	tree (species)
<i>tani'</i>	father	<i>wakalí</i>	mosquito
<i>tanú</i>	head	<i>wal</i>	tree (species)
<i>tapa</i>	bed	<i>walepi</i>	crocodile
<i>tariè</i>	ear	<i>walepi'</i>	crocodile
<i>tei óu</i>	branch	<i>wali'</i>	neck
<i>tei péi</i>	trunk	<i>wàlpi</i>	crocodile
<i>tei tá</i>	bark	<i>wang dei</i>	sing
<i>téi</i>	tree	<i>waruwau</i>	tree (species)
<i>tèing</i>	wind	<i>wasá</i>	blackpalm basket
<i>terei sie</i>	twins	<i>wasai</i>	fern (edible)
<i>téte</i>	PPP, CCC	<i>wàu</i>	centipede
<i>ti'</i>	fire	<i>wáus</i>	prawn
<i>ti' nanai</i>	light	<i>wasu</i>	tree (species)
<i>ti' sòu</i>	ashes	<i>waying</i>	lizard
<i>ti' ume</i>	smoke	<i>we</i>	fish
<i>tila</i>	tree (species)	<i>wè</i>	fish
<i>tilip</i>	tree (species)	<i>wéi</i>	house
<i>tinan</i>	tree (species)	<i>wéi yàu</i>	bush house
<i>tipulup</i>	tree (species)	<i>wèi</i>	language
<i>tiru</i>	tree (species)	<i>wèngpi</i>	flank
<i>tirue</i>	tree (species)	<i>wèngpi</i>	flank
<i>tiwie</i>	tree (species)	<i>wesie</i>	tulip
<i>tiya</i>	tree (species)	<i>weslé</i>	jaw
<i>tokóu</i>	knee	<i>wì</i>	water, river

<i>wì debuwe</i>	wash	<i>yàng su'</i>	sole of foot
<i>wi'</i>	salt, sea	<i>yani'</i>	PP, CC
<i>wi'pupo'</i>	beach	<i>yánuai</i>	bird of paradise
<i>wii</i>	sick	<i>yapal</i>	tree (species)
<i>wing dido</i>	wasp	<i>yapupe</i>	yellow
<i>wìng</i>	banana	<i>yáu</i>	seed
<i>wini</i>	FZ, MB	<i>yaulu</i>	tree ('harima')
<i>wiy</i>	wet	<i>ye</i>	bone
<i>wíysau</i>	forest	<i>yèi</i>	bow
<i>wolou</i>	tree (species)	<i>yèi yi</i>	bowstring
<i>wolow</i>	long	<i>yéíng</i>	cockatoo
<i>wolu</i>	bamboo arrow	<i>yelie</i>	star
<i>womo</i>	tree (species)	<i>yelié</i>	hip
<i>woung wapi</i>	diamond python	<i>yenui</i>	magpie
<i>wòung wapi'</i>	snake	<i>yerei</i>	owl
<i>wulié</i>	sago porridge	<i>yéri</i>	owl
<i>wurowal</i>	killer lizard	<i>yilmùni, yonímùni</i>	bush turkey
<i>yá</i>	hair	<i>yoko</i>	stone
<i>yá</i>	body hair	<i>yól, kop</i>	fence
<i>yabu</i>	blue, green	<i>yomunó, yokonò</i>	pile, stilt
<i>yàkanu</i>	hornbill	<i>yoplu</i>	near
<i>yakuwa</i>	tree (species)	<i>you emi</i>	tummy button
<i>yaluw</i>	tree (species)	<i>yóu</i>	stomach
<i>yamiyo</i>	tree (species)	<i>yumu</i>	you (PL)
<i>yàng</i>	leg	<i>yùng</i>	bird
<i>yàng moni'</i>	big toe	<i>yùngpaul</i>	chicken
<i>yàng nakáing</i>	toe	<i>yúwe', yúwa'</i>	all

10.4 Grammatical morphemes

The following list of grammatical morphemes includes a description of their meaning, and a reference to the section in the text where they are discussed.

<i>-be</i>	2SG OBJ	5.2.3	<i>-wo</i>	dubitative	5.7.5
<i>-de</i>	1SG OBJ	5.2.3	<i>-ya</i>	completive	5.7.1
<i>-i</i>	3PL, 3DU OBJ	5.2.3	<i>-ye</i>	2PL OBJ	5.2.3
<i>-i</i>	3PL DAT	5.2.4	<i>-ye</i>	2PL DAT	5.2.4
<i>-ka</i>	3SG.M DAT	5.2.4	<i>b-</i>	2SG SUBJ	5.2.2
<i>-ke</i>	3SG.M OBJ	5.2.3	<i>d-</i>	1SG SUBJ	5.2.2
<i>-ki</i>	3SG.M OBJ	5.2.3	<i>di-</i>	1PL SUBJ	5.2.2
<i>-ma</i>	2SG DAT	5.2.4	<i>e-</i>	3PL SUBJ	5.2.2
<i>-na</i>	1SG DAT	5.2.4	<i>k-</i>	3SG.M SUBJ	5.2.2
<i>-ni</i>	1PL DAT	5.2.4	<i>ka-</i>	3SG.M OBJ ('get' only)	5.2.3
<i>-pa</i>	sequential action	6.5	<i>la-</i>	3PL OBJ ('get' only)	5.2.3
<i>-pa</i>	frozen adjectival affix	2.3.1, 4.1, 5.3.1	<i>m-</i>	2SG SUBJ	5.2.2
<i>-pu</i>	frozen adjectival affix	2.3.1, 3.4	<i>mi</i>	negative	5.7.2
<i>-re</i>	evident	5.2.1, 5.2.5	<i>mú</i>	imperative	5.7.3
<i>-ri</i>	instrumental	5.1.1	<i>n-</i>	1SG SUBJ	5.2.2
<i>-sa</i>	2/3DU DAT	5.2.4	<i>ni</i>	prohibitive	5.7.4
<i>-se</i>	2DU OBJ	5.2.3	<i>ni-</i>	1PL SUBJ	5.2.2
<i>-si</i>	1DU OBJ	5.2.3	<i>o-</i>	3SG.M OBJ ('do' only)	5.2.3
<i>-si</i>	1DU DAT	5.2.4	<i>ou-</i>	3PL OBJ ('do' only)	5.2.3
<i>-sing</i>	dual accompanier	5.1.2	<i>s-</i>	2/3DU SUBJ	5.2.2
<i>-tro</i>	with	5.1.2, 6.7	<i>sa-</i>	accompaniment	5.1.2
<i>-ung</i>	3SG.NM DAT	5.2.4	<i>si-</i>	1DU SUBJ	5.2.2
<i>-wi</i>	3SG.NM OBJ	5.2.3	<i>t-</i>	3SG.NM SUBJ	5.2.2
			<i>w-</i>	3SG.NM SUBJ	5.2.2
			<i>yi-</i>	2PL SUBJ	5.2.2

Note that in this list both the nasalised and non-nasalised allomorphs of the subject prefixes have been listed.

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