Spatial Reference in Momu

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<table>
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<th>#</th>
<th>Person</th>
<th>Abbreviation</th>
<th>Meaning</th>
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<td>instrument</td>
</tr>
<tr>
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<td>second person</td>
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<td>intensifier</td>
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<tr>
<td>INAN</td>
<td>inanimate</td>
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CHAPTER 1  INTRODUCTION

1.1 Why study space?
Spatial conception is of primary importance for human beings. We rely on our capacities for spatial thinking whenever we consult the street directory, explain to a friend where we've parked our car, select appropriate sized containers to store food, and so on. So central is spatial thinking to human cognition that we typically convert non-spatial problems into spatial ones. We translate knowledge into tables, graphs, maps and diagrams. We draw heavily on spatial metaphors in other domains, for example we talk about our mood being 'up' or 'down', voices being 'high' or 'low' pitched, kin relationships as 'close' or 'distant'. Space is so central to language that the grammar of locative relations often provides a template for other non-locative areas of the grammar such as aspect, temporal marking and causal relations.

The nature of space has been a central theme of philosophical and scientific enquiry in the western tradition, and a favourite battleground for rival epistemologies. The recent era has been dominated by rationalism, the view that the most basic aspects of human cognition are innate, and therefore universal. In an effort to emphasise the cognitive unity of mankind, cultural and linguistic differences have been minimised and sometimes ignored. The primacy of spatial cognition, together with the constraints imposed by human neurophysiology, anatomy, and innate cognitive capacities, has made the spatial domain ripe territory in the hunt for universals. Working on the assumption that spatial language closely parallels spatial thinking, theorists have assumed that the linguistic structuring of the spatial domain gives direct access to the supposedly innate universals of spatial cognition. Extrapolating from the semantics of prepositions in familiar Indo-European languages, theorists have claimed that coordinate systems for locating entities have their origin in the ego, projecting directions outwards from the six planes of the human body, 'back' and 'front', 'left' and 'right' and 'up' and 'down'. In other words, humans are predisposed to conceive of spatial relations in ways that are egocentric, anthropomorphic and relativistic.

Ordinary languages are designed to deal with relativistic space; with space relative to objects that occupy it... The conceptual core of space probably originates, as Cassirer (1923)
and others have maintained, with the body concept... From this point of origin ego can lay out a three-dimensional coordinate system that depends on his own orientation. With respect to this landmark other objects can be directionally located as above or below (ego), in front or in back (of ego), to the left or the right (of ego). (Miller and Johnson-Laird 1976: 380, 394-5)

Recent investigations carried out by the Cognitive Anthropology Research Group at the Max Planck Institute for Psycholinguistics have focused on cross-linguistic representations of the spatial domain. This has involved detailed analysis of a large sample of geographically and typologically diverse languages. The results have been surprising, uncovering extensive and unexpected variation in the means languages have available to encode spatial relations. Languages have been discovered that do not express spatial relations in egocentric and relativistic terms, but rather rely on fixed coordinates abstracted from environmental cues in the surrounding terrain. These coordinates are drawn from a great variety of sources, for example the solar compass, wind directions, river drainage, mountain slopes and sidereal motion. Such coordinates can be applied to both large and small-scale space. It is not uncommon to hear Arrernte people speaking of their eastern leg (Levinson and Wilkins 2006b: 549), or Tzeltal people speaking of hot water coming out of the uphill tap (Levinson 2003: 2). Furthermore many languages do not make use of left/right and front/back distinctions at all.

Using supplementary psychological experiments, Max Planck researchers have shown that for speakers of a particular language, non-linguistic representations of spatial cognition correspond closely to the types of distinctions made linguistically. For example, speakers of Tzeltal, a language that does not have a left/right distinction, failed to detect a difference between two mirror image photos flipped on the left/right axis (Levinson 2003: 4). As such the way one talks about space has enormous ramifications for other processes of spatial cognition, including memory, inference and navigation.

People like these who use absolute directions as their main way of designating [spatial relations]... can be shown to have acquired a distinct cognitive style, involving a constant
sense of direction and a conceptual coding scheme based on fixed directions in memory and reasoning. (Levinson 2006: 542)

Our understanding of the vast area of spatial cognition has developed primarily in relation to extrapolations from Indo-European cultures and languages. But we now have enough evidence to show that cultural and linguistic differences do not always conform to the structure of these supposedly universal conceptual categories, rendering the views of rationalist thinkers such as Miller and Johnson-Laird (1976) untenable. It is the role of linguists and anthropologists to investigate how people of different cultures conceive, talk about and operate in space. Once a thorough and comprehensive data collection has been compiled we will achieve a broad understanding of the similarities and differences in how the spatial domain is represented cross-linguistically. From there we will have solid evidence from which to establish the limits of the spatial domain and seek universals within. As such we will gain a much deeper insight into this central area of human cognition.

The purpose of this thesis is to make a preliminary investigation into the linguistic aspects of the spatial reference system of Momu, a little-known Papuan language spoken in the West-Sepik area of Papua New Guinea. The analysis will contribute to the growing body of knowledge about the cross-linguistic representation of the spatial domain. It will serve as a starting point for a thorough investigation into the details of spatial language in Momu, from which it will then be possible to investigate the corresponding non-linguistic aspects of spatial cognition for Momu speakers.

1.2 Momu

1.2.1 The Momu language

The Momu language is known in the literature by the name Fas. However, residents of the two Momu speaking villages that I visited, Mori and Savamui, along with visiting villagers from Mumuru, strongly objected to their language being identified as Fas. There are 19 Momu speaking villages, one of which is called Fas, and it was felt that identifying the language by this name would bestow unfair prestige upon the speakers residing in Fas village. It was therefore requested that the language be identified as Momu, the word for 'no',
in line with a general pattern in the area of naming languages with their word for 'no'.

Further reason to support their wishes is a sociolinguistic report of one of the western Momu-speaking villages, Kilifas, written by Frans Zestra for the Summer Institute of Linguistics (SIL) in 1998, which he entitles 'Momu-Fas visit' (Zestra 1998). It is clear that a positive identification with this name extends into villages beyond the two that I visited. This thesis will therefore identify this language as Momu, in respect for the wishes of the speakers.

The linguistic classification of Momu is currently under dispute. It was first classified by Loving and Bass in 1964 as belonging to the Kwomtari Phylum. They proposed that this small family contained four members, Baibai and Momu in one branch, and Kwomtari and Biaka in the other (Loving and Bass 1964). In 1975 Laycock altered the subgroupings suggested by Loving and Bass, grouping Momu and Kwomtari together in one branch and Baibai and Biaka in the other. He also linked the language isolate Pyu as comprising another branch of this family (Laycock 1975). In an survey he undertook for SIL in 1983, Wietze Baron re-classified the the Kwomtari Phylum in accordance with the original analysis proposed by Loving and Bass, however maintaining Laycock's addition of Pyu. He also identified a new language, Guriaso, which he linked to the Kwomtari branch (Baron 1983b). This classification is schematised in the diagram below.

---

1 Other languages in the region named by their word for 'no' include the One language spoken in the area to the south (Crowther 2001). The languages of the Piore River branch of the Skou family spoken in the area to the north-east are each identified by indigenous speakers by their word for 'no': Barupu Bauni, Sumo Bouni, Ramo Wauni, and Pou Uni (pers. comm. Mim Corris 2007 and Michael Wamu 2005). In the region to the west speakers of the Amanab and Dla languages refer to each other by their respective words for 'no', as Awe (Dla) and Awaï (Amanab) (de Sousa 2006). In the Kwomtari family, both the Guriaso and Kwomtari languages are also known locally by their words for 'no' which are Munoh and Ma respectively (Baron 1983b).
The Ethnologue lists the membership of the Kwomtari Phylum according to the subgroupings of Laycock's classification, rather than the more recent classification proposed by Baron (Ethnologue 2005). In 2005 Malcolm Ross proposed a link between the neighbouring Left May family and the Kwomtari Phylum, but excluding the Pyu isolate, based on possible pronoun cognates (Ross 2005). His analysis is undermined somewhat by its reliance on the outdated classification of Laycock. Little is known about any of the proposed members of these families, and hence further investigation will be required before an accurate classification can be established.

The languages of the Kwomtari Phylum are spoken over a large area in the north-western part of Sandaun Province. An approximate indication of this region is marked on the map in Figure 2 below.
Figure 2 - Location of Mori with respect to Papua New Guinea

The Momu language is the northern-most member of the Kwomtari-Baibai family, and is spoken in an area encompassing 19 villages stretching roughly 70 kilometres from the Bewani mountains in the west to the Piore River in the east, following the course of the river to near where it joins with the Bliri River and becomes the Arnold River. Current population figures are unavailable, the most recent figures being those provided by SIL in 1988, when there were approximately 1600 speakers (Ethnologue 2005).

Prior work on the Momu language was done by Wietze Baron, who served as an SIL missionary and worked intermittently on Momu from 1977 until 1984. Baron was based in
one of the western-most Momu speaking villages, Kilifas. Unfortunately little of his work is
publicly available. I was able to obtain two published papers and three unpublished
manuscripts through SIL. These papers include a survey covering general grammatical and
lexical information on Momu and the other languages within the Kwomtari Family. Three
short papers consider specific phonological and orthographic issues, and the final manuscript
provides preliminary speculation on aspectual information (Baron 1983 a, b, c, 1984, and
date unknown).

My fieldwork was carried out in Mori village, the eastern-most Momu speaking village. This
village has approximately 250 inhabitants living in the central village area, with an estimated
100 more living in more isolated groupings in the surrounding bushland. Older members of
the village report that Mori was originally a Puare² speaking village, but changed over the
course of a generation as many Momu speaking women married into the village. The few
remaining speakers of Puare have relocated to Onei, a small Puare speaking village on the
coast. Momu speakers reported differences in both lexicon and pronunciation between the
two eastern-most Momu speaking villages on the Piore river and the remaining majority of
villages in the mountains. They described their own dialect as 'light' and that spoken in the
mountains as 'heavy'. This has yet to be investigated, though the differences must be minor,
as the data I collected corresponds closely to Baron's notes compiled in the western village of
Kilifas.

The use of Momu is in decline in Mori. For the younger generations the lingua franca Tok
Pisin serves as the language of everyday communication. While all adults above 20 have a
good active command of Momu, it was generally agreed that their ability was not sufficient
to provide reliable linguistic data. My informants were all in their forties or fifties, and while
their linguistic abilities were deemed suitable for the task, it was still acknowledged that their
language skills were inferior to those of older people. Unfortunately the elderly members of
the village were either too unwell or lacked enough teeth to be suitable informants.

² Puare is a near-extinct Skou language spoken on the Northern Coast in the area surrounding Puari
village. The most recent population figure (2003 SIL) is approximately 35 speakers (Ethnologue
2005).
Teenagers, on the other hand, were very hesitant to speak the language, and small children did not speak it at all. However all children exhibited adequate passive knowledge of the language. They were frequently addressed in Momu by members of the older generations and would respond in Tok Pisin.

The use of Tok Pisin vocabulary in Momu sentences is common. Tok Pisin is always used to name non-traditional objects such as buckets, fans and chairs, but, if pressed, a creative Momu equivalent can usually be found. Tok Pisin verb stems regularly show up in primarily Momu discourse with full Momu inflection for person, number and aspect.

1.2.2 Mori village

![Figure 3 - Location of Mori](image-url)
Mori is located on the Northern bank of the Piore river, 22 kilometres from where it empties into the ocean just North of Mainya (Sissano). It is situated 84km southeast of Vanimo, and 47 kilometres west of Aitape, which both function as town centres for the residents of Mori village. Mori has an altitude of approximately 100m above sea level, and looks out over the Bewani Mountains which form a backdrop rising in the south-west. The location of Mori is shown on the map in Figure 3 above.

The Mori people are largely self-sufficient, relying on two distinct forms of crop cultivation as the basis of their diet. The first is a form of arboriculture, which involves selectively harvesting sago palms growing naturally in the forest, a laborious process which produces copious quantities of the staple, sago starch. This carbohydrate is supplemented by a variety of crops that are cultivated in cleared garden plots. Examples of such crops are sweet potato, taro, corn, cucumber, tomatoes, shallots and beans.

Some family groups own gardens and sago palms situated in close proximity to the village. However others must travel up to several hours walk to reach their cultivation sites. These families build temporary bush huts on location to serve as a base for regular sago-processing expeditions. Various family members will then spend several days producing sago to sustain the family through the next few weeks.

Mori people's diet is also supplemented by a wide variety of animal protein sourced from the river, including turtles, small fish, yabbies, eels, crabs and clams as well as other sources foraged for in the bush such as sago grubs and eggs. Hunting expeditions and pre-set traps yield an abundance of game meat including cassowary, wild pig, wild birds, bandicoot, wallaby and possum. While there is no tradition of animal husbandry, some villagers keep a small number of semi-domesticated pigs, chickens, cassowary chicks and wallabies. Pig is the traditional food for celebrations, and many villagers hold the opinion that festivities cannot proceed without one. During the time I spent in Mori village, Christmas celebrations were delayed by a week due to failure to catch a pig in time.

Women and children are responsible for the majority of the food cultivation. Men help out with the initial stages of sago production and are responsible for hunting game meat. Women
do all the housework, and take care of the children. There is no paid work in the village, however many Mori people have been employed by logging companies who have operated sporadically in the area for the last couple of decades. Others obtain occasional and infrequent work in the town centres. The Mori people are only minimally dependent on the town centres, making occasional trips to collect mail and buy tools, clothes, medicines and various items of Western food, including rice and salt for celebration feasts.

The members of Mori village belong to one of three clans, Farsisu, Makumene, and Savnamui. Clan membership determines marriage rights, with partnerships within the same clan forbidden. Men remain in their clan once married, while women must take on the clan membership of their husbands.

A small school opened at the beginning of 2005 in the neighbouring village of Savamui, approximately one hour's walk from Mori. The school employs two non-local teachers, who each take a grade 1 class. Roughly 80 children attend the school, a quarter of whom travel from Mori. Most children who attend the school are in their teenage years.

Mori village was christianised by Catholic missionaries in the 1930s but made the conversion to the charismatic New Apostolic denomination when American missionaries came through the area in the late 80s. The church is run by a hierarchy of village leaders who are subordinate to district leaders, who in turn are subordinate to national leaders. The Papua New Guinean branch of the church is overseen by the New Apostolic Church in Australia. 17 Mori men are involved in the leadership of the church and referred to as apostles. Everyone in the village claims a connection to the church, though some attend zealously and others only now and then. The church plays a central role in village and inter-village life, with twice weekly services and regular 'fellowships' which involve bible teaching, testimonies, dramas and meals. There are also regular meetings of leaders in villages around the area. The church provides some financial revenue for the village.
1.3 Summary of fieldwork

This thesis is based on fieldwork that was carried out together with Tom Honeyman over a four month period from September 2005 to January 2006. Prior to this I had accompanied Mim Corris on a field-trip to Papua New Guinea for one month over December 2004 - January 2005. The purpose of this initial trip was to familiarise myself with the environment and culture, learn the lingua franca, Tok Pisin, establish contact with Momu speakers and locate a suitable base for fieldwork. During this time I was based in the village of Barupu at Sissano Lagoon, where Mim was documenting the Barupu language. Mori was chosen as the location for my fieldwork for purely practical reasons: being a one-day walk from Barupu, it was the closest and most easily accessible Momu-speaking village.

During the second field-trip a large corpus of data was collected. This corpus consists of several folders containing lexical items, verb paradigms and elicited sentences. In addition to this there are 30 transcribed texts together with digital audio recordings and 8 transcribed texts with accompanying audio and video footage. The texts cover a wide variety of genres and subject matter. The data contained in this thesis is drawn from all of these sources.

1.4 Grammar sketch

Momu has canonically Papuan SOV basic constituent order (Foley 1986: 10). However it does not exhibit the high level of morphological complexity for which Papuan languages are so famous. Analysis of Momu phonology and morphosyntax is currently in its early stages. This section provides a very brief sketch of some aspects of Momu grammar, in order to assist the reader in understanding the examples used throughout the thesis. It will firstly introduce the phonemic inventory and the associated orthographic conventions to be employed in this thesis. It will then cover verbs, their related morphology and different types of multi-verb constructions. Finally it will examine nouns, noun phrases, and their corresponding phrase level morphology.
1.4.1 Phonemes and orthography

1.4.1.1 Consonants

Momu has the following consonants in its phonemic inventory. The phonemic status of the pre-nasalised alveolar stop *d is at this stage undetermined. It is possible that it is simply an allophone of t or n. The bilabial fricative is sometimes realised as a trill, particularly by older speakers but more generally in situations where the word which contains it is pronounced emphatically. The two allophones appear to be in free variation, as no minimal pairs were obtained where the choice of allophone signalled a meaning difference.

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Table 1 - Momu consonant phonemes

1.4.1.2 Vowels

![Vowel phonemes diagram]

Figure 4 - Momu vowel phonemes

Momu has at least five vowel phonemes, with the possible addition of schwa or a similar centralised vowel. It appears that schwa only occurs in unstressed and closed syllables, for example *asamwa 'mosquito' and *fak 'house', however this hypothesis needs to be confirmed
by further investigation. There is a possibility that Momu also has three phonemic diphthongs: ou, ei and ai, however at this stage it is unclear whether these sounds are actually diphthongs or rather combinations of vowels and semivowels.

1.4.1.3 Orthography

The orthography used in this thesis will employ the same symbols as the above IPA symbols with the exception of 'β' which will be represented by 'B', and 'j' which will be represented by 'y'. Potential diphthongs will be written as such.

1.4.2 Word classes

The two major word classes in Momu are nouns and verbs. Verbs are distinguished by their ability to inflect for argument agreement and categories such as aspect and mood. Nouns can be distinguished primarily by their ability to function as arguments of verbs, as well as their inability to inflect for the above categories associated with verbs. Other word classes have not been formally established, but possibilities include adjectives, demonstratives, postpositions, adverbs and discourse particles.

1.4.3 Verbs and verbal morphology

1.4.3.1 Verbal roots

Many verb stems have two alternative forms which indicate whether the core-arguments are singular or non-singular. Alternations occur according to the ergative pattern exhibited in many Papuan languages, where different stems indicate the number value for the subject argument of intransitive verbs and for the object argument of transitive verbs3 (Foley 1986: 128).

---

3 For this reason verbs that have suppletive stems will be referred to throughout this thesis by listing both stems, for example pən/ina 'go'. In the gloss line of examples, the verb will be glossed with its English equivalent together with information about its form (singular or non-singular subject or object) in brackets. For example pən 'go, singular subject' will be glossed as follows: go(SG.SUB).
The following examples show alternations in intransitive stems, indicating the number value of the subject:

\[
\begin{align*}
\text{pon} & \quad \text{'one goes'} & \text{ina} & \quad \text{'many go'} \\
\text{oton} & \quad \text{'sit'} & \text{otokta} & \quad \text{many sit'} \\
\text{puen} & \quad \text{'come'} & \text{napuen} & \quad \text{'many come'}
\end{align*}
\]

For some verbal roots the alternations are entirely suppletive, as shown by \textit{pon/ina} above. Other pairs show a clear relationship in the phonological form of the two stems, for example \textit{oton/otokta}. The majority of alternates are formed by a productive process of derivational morphology, where \textit{na}- is prefixed to the root for the non-singular form, as in \textit{puen/napuen} above. There is also a large number of intransitive verbs that do not have stem alternations.

The following examples show alternations in transitive stems, indicating the number value of the object:

\[
\begin{align*}
\text{tapunai} & \quad \text{'pluck one fruit'} & \text{es} & \quad \text{'pluck several fruits'} \\
\text{nemkien} & \quad \text{'put one thing inside'} & \text{mekien} & \quad \text{'put several things inside'} \\
\text{aBsi} & \quad \text{'wash one'} & \text{neBsi} & \quad \text{'wash several'} \\
\text{neBsi} & \quad \text{'hold one thing'} & \text{tyeBsi} & \quad \text{'hold several'}
\end{align*}
\]

Once again there are some stem alternations that are suppletive, as demonstrated by \textit{es/tapunai} above. Others show a clear relationship in phonological form, for example \textit{nemkien/mekien} and \textit{aBsi/neBsi}. There are a large number of stem alternations where the singular form begins with \textit{na-} or \textit{nə-} and the non-singular form begins with \textit{t-}, \textit{tye-} or \textit{tyə-}, as in \textit{neBsi/tyeBsi} above. There are also some transitive verbs that lack stem alternations.

The single ditransitive verb \textit{noi/tui 'give'} has stem alternations indicating whether the object being given is singular or non-singular and further alternations for the person and number value of recipients. The patterning of the alternations is not entirely regular throughout the entire paradigm. The following examples show the possible variants when the verb is
inflected with the suffix -f for a second person singular subject. The first column shows the various stems indicating the person and number value of the recipient when the object is singular, and the second column shows the same combinations when the object is non-singular.

\[ \begin{align*}
\text{nera-f} & \quad 'you give one thing to me' & \text{tira-f} & \quad 'you give several things to me' \\
\text{no-f} & \quad 'you give one thing to him' & \text{tu-f} & \quad 'you give several things to him' \\
\text{nima-f} & \quad 'you give one thing to us' & \text{tima-f} & \quad 'you give several things to us' \\
\text{nino-f} & \quad 'you give one thing to them' & \text{tino-f} & \quad 'you give several things to them'
\end{align*} \]

It is possible that the alternation patterns for all types of verbs are determined according to verb class, however this is yet to be investigated.

### 1.4.3.2 Verbal morphology

#### 1.4.3.2.1 Agreement marking

Momu marks pronominal subject and object on the verb with suffixes and prefixes respectively. Subject marking is obligatory, while the use of object marking seems to be diminishing. Momu distinguishes three persons and three numbers in the subject agreement suffixes, but only two numbers in the free pronouns, where dual and plural are collapsed into a single category (see section 1.4.3.4.5 on page 23).\(^4\) Object prefixes mark even less distinctions as the first and second person non-singular categories are collapsed.

---

\(^4\) For this reason subject marking will be glossed as SG 'singular', DU 'dual' and PL 'plural', but for personal pronouns and object marking the collapsed dual and plural categories will be glossed as NSG 'non-singular', rather than 'plural', to avoid confusion.
Table 2 - Momu subject inflections

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>DU</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-Ø</td>
<td>-rai</td>
<td>-t/-r</td>
</tr>
<tr>
<td>2</td>
<td>-f</td>
<td>-mi</td>
<td>-m</td>
</tr>
<tr>
<td>3</td>
<td>-Ø or rounding</td>
<td>-fi</td>
<td>-si</td>
</tr>
</tbody>
</table>

Table 3 - Momu object Inflections

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>NSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a-</td>
<td>ma-</td>
</tr>
<tr>
<td>2</td>
<td>wa-</td>
<td>ma-</td>
</tr>
<tr>
<td>3</td>
<td>Ø-</td>
<td>ni-</td>
</tr>
</tbody>
</table>

Complex morphophonemic processes determine the shape of the verb stem. Some stems ending in consonants lose their final consonant before suffixes. Some stems ending in vowels alter this vowel in the first, second and third person singular inflections. For the sake of consistency, verb stems with singular subjects will always be referred to in the form they take when inflected for a third person singular subject without any additional affixes.

1.4.3.2.2 Valence changing morphology

The prefixes *na-* and *tye-* derive transitive verbs from intransitive verbs. *na-* is used when the object is singular and *tye-* is used when the object is non-singular. The following examples show intransitive and transitive uses of the verb *oton/otokta 'to sit'*. 

Intransitive:

(1) \( \text{te oton} \)
  \(1\text{SG sit(SG.SUB).1SG}  \)
  \( I \text{ sit down} \)

Transitive, singular object:

(2) \( \text{te Luke na-oton} \)
  \(1\text{SG Luke TRANS(SG.OBJ)-sit(SG.SUB).1SG}  \)
  \( I \text{ sit Luke down} \)
Transitive, plural object:

(3) te Baso tyeneBem tye-oton
    1SG child two TRANS(NSG.OBJ)-sit(SG.SUB).1SG
    I sit the two babies down

Fossilised remains of these transitivityising prefixes are evident in the suppletive paradigms of many transitive verbs. Looking once again at the verb meaning 'to hold', _neBsi_ is used for a singular object, where as _tyeBsi_ is used for non-singular objects. However the part they have in common, _eBsi_, can no longer be isolated.

1.4.3.2.3 Tense/Aspect/Mood

Momu marks a number of aspectual and mood categories as suffixes in the final position on the verb. While a number of suffixes have been identified, their semantic nuances are yet to be analysed and will be glossed in this thesis as simply ASP 'Aspect' and MOOD 'Mood'.

1.4.3.3 Multi-verb constructions

1.4.3.3.1 Verb compounds

Verbs of putting often form compounds with verbs specifying direction, whereby the direction in which an object is placed is specified. The primary verb is followed by the directional verb, which has its initial consonant deleted. Compounds have not been identified for other types of verbs. The following examples show the general verb for 'put' _oton/Bun_, and the more specific verb meaning 'to slide something into place' _san/sinin_, compounded with directional verbs.

- _oton_ 'put one thing'
- _otonok_ 'put one thing in' (wok 'go down/inside')
- _otonon_ 'put one thing up' (won 'go up')
san 'slide one thing into place'
sanok 'slide one thing inside into place'  (wok 'go down/inside')
sanon 'slide one thing upwards into place'  (won 'go up')

1.4.3.3.2 Serialised verbs

Verbs are often combined in serialised structures, with the initial verb in reduced form and lacking inflection for person or aspect/mood. The primary verb follows and carries full inflection. The following examples show sentences containing serialised verbs.

(4)  Fiona efkaBo-m ni'd oto ya'iwo
Fiona floor-CASE on sit(SG.SUB) be.at.DIST.AN.3SG
Fiona is sitting on the floor

(5)  yers neBem as ikaka kas-rai
1NSG two sago do.well fry-1DU
We two fry sago very well

1.4.3.3 Coordination

Multiple verbs are often simply coordinated. These structures can be identified as single clauses from intonation patterns. Verbs combined in this manner differ from serialised verbs as both verbs have equal status and carry full inflection. The following examples show verbs combined in clause chains.

(6)  patie pu'en
get.ready(SG.SUB).1SG come(SG.SUB).1SG
I get ready and come

(7)  Baso fi-m ku sen
child water-CASE consume.3SG die(SG.SUB).3SG
the child drinks water and dies

1.4.3.4 Nouns and nominal morphology

Nouns can be distinguished primarily by their inability to inflect for verbal categories such as subject agreement and aspect. Momu nouns are uninflected for number and gender. Number
distinctions manifest in verbal morphology, and Momu does not appear to have grammatical gender. At this point it is unclear whether demonstratives and pronouns can be formally distinguished from nouns. Neither group can take verbal morphology. There is no evidence to motivate adjectives as a distinct word class.

It is not clear whether Momu nouns take any affixal morphology, as most morphology appears to cliticise to the final element of the noun phrase. Noun phrases can consist of a bare noun or multiple elements. Noun phrases are predominantly left-headed and dependent marking. The position of other elements within the noun phrase appears to be variable and whether a basic order exists is yet to be established. The following discussion will consider case and possession marking with respect to Momu noun phrases.

1.4.3.4.1 General case marker

The case marker -m cliticises to the final element of the noun phrase. It marks a variety of semantic roles, including patient and beneficiary, and locative roles such as static location, physical path and goal. There are no examples where it marks the patient and location in the same clause, however there are several examples where both the patient and recipient are marked. The following examples show the various semantic roles that can be marked by -m.

Marking static location:

(8)  man  oko-m  youwo
     string.bag  ground-CASE  be.at.DIST.INAN.3SG
     the string bag is on the ground

Marking goal:

(9)  te  nu  aitape-m  pə-mu
     1SG  ASP  Aitape-CASE  go(SG.SUB).1SG-ASP
     I'm going to Aitape

Marking physical path:

(10) te  kos-m  won  pən
     1SG  road-CASE  upriver.away  go(SG.SUB).1SG
     I'm travelling upriver on the road
Marking patient:

(11) te at-m in
    1SG banana-CASE plant.1SG
    *I plant a banana*

Marking recipient:

(12) te wasi ai-m nuai-mu
    1SG pawpaw 2SG-CASE give(SG.OBJ)(2SG.REC).1SG-ASP
    *I give you a pawpaw*

Marking both patient and recipient:

(13) te ai-m ku-m tuai ki-f
    1SG 2SG-CASE food-CASE give(NSG.OBJ)(2SG.REC).1SG eat-2SG
    *I feed you*

However the -m clitic is not always present in a clause containing a location, object or beneficiary. Baron (1983b: 15) states that object marking only occurs on new information, and is used in discourse for the purpose of highlighting, such that new but non-thematic information may be presented without the suffix. There are many elicited examples both with and without the suffix. Given that it is impossible to reconstruct the discourse that contextualised these examples, it is therefore not possible to test Baron's hypothesis against them. Further investigation needs to be done into the discourse status of -m in textual data.

1.4.3.4.2 Possible oblique case marker

The second case marker which has been identified thus far is the clitic -B, which also attaches to the final element of a noun phrase. The most frequent examples in the corpus mark the semantic role of instrument. The example below shows -B on the final element of the noun phrase marking 'my long knife' as instrument.

(14) te naina fato-B naBɔɔ-ɔm tekopwan
    1SG knife long 1SG.POSS-INST sweet. potato-CASE cut.lengthwise.1SG
    *I cut the sweet potatoes with my long knife*

However this morpheme also appears on deictic demonstratives when they are serving temporal functions.
In addition to this many of the independent words expressing temporal notions also contain -B as their final element. However as these words don't seem to exist independently of the -B, it appears this clitic has become fused into the phonological form of these words.

*kaB* - morning

*finiB* - evening

*yeB* - thereafter

*yob* - earlier

Finally, the -B clitic possibly plays a role in the formation of the comitative, marking one or both participants in either the subject or object role. It is used when the participants are being located together, or described as performing an action together. The following examples show the comitative marker. The first two examples involve two participants being located together. In example (16) only the second participant is marked with -B, where as in example (17) both participants are marked with -B. In example (18) both the subject and object are two participants performing an action together. For the subject only the second participant is marked with -B, however for the object it is both. This examples shows that when the noun marked with the comitative clitic is the object, it can also be marked with -m.

(15) a-narin Vanimo, anu-B mori-m naiwo
1SG.OBJ- Vanimo DEM.PROX- Mori- be.at.PROX.AN.3SG
give.birth(SG.OBJ.1SG TEMP CASE

*My mother gave birth to me in Vanimo, now she is in Mori*

(16) PNG Australia-B fiki-m yofiu
PNG Australia-COM near-CASE be.at.DIST.INAN.3DU

*PNG is near Australia*

(17) Mafoka-B Mori-B ikoB yofiu
Mafoka-COM Mori-COM together be.at.DIST.INAN.3DU

*Mafoka is near Mori*

(18) te luk-B Fiona-B-em Tom-B-em naiyine
1SG Luke-COM Fiona-COM-CASE Tom-COM-CASE follow.1SG

*Luke and I follow Fiona and Tom*
While investigation into the marking of case and semantic roles in Momu is in its early stages, it is possible to put forward a speculative analysis. -m potentially marks highly thematic core arguments, so long as verbs expressing locative relationships are analysed as transitive. The clitic -B could then be analysed as an oblique case marker.

Throughout this thesis, -m will be glossed as CASE and -B will be glossed for whichever semantic role it marks, be it instrument (INST), temporal (TEMP) or comitative (COM).

1.4.3.4.3 Exclusivity marker

A further clitic appearing attached to the final element of the noun phrase is -s, which mark nouns for exclusivity, expressing the notion of 'just' the particular entity concerned. It can mark both animate and inanimate entities. This is demonstrated in the following examples:

(19) te sumui-s pɔ-mu
    1SG Sumo-JUST go(SG.SUB).1SG-ASP
    I'm going to just Sumo

(20) te neBu-s ki-mu
    1SG meat-JUST eat.1SG-ASP
    I'll eat just meat

(21) ai emsi tyeneBam-s pati-e
    2SG betel.nut two-JUST pick.up-IMP
    you pick up just two betel-nut

(22) teBs ku ki-mu
    1SG-?-JUST food eat.1SG-ASP
    Just I will eat.

1.4.3.4.4 Directional marker

The clitic -ti attaches to the final element of a noun phrase to provide directional specification. This is shown in the following example where the entity to which it cliticises, *fuku* 'front', provides the direction in which the cup is located with respect to the speakers location.
This clitic behaves in complex ways in different locative scenarios and will be discussed in detail in section 3.2.1 on page 51.

1.4.3.4.5 Pronouns

The following paradigm shows the Momu free-standing personal pronouns. Fewer number distinctions are marked than those marked by the subject suffixes as the dual and plural forms are collapsed into a single non-singular category. Any meaning differences in the alternations provided for the first and second person non-singular forms are at this stage unclear, as they do not correlate with an inclusive/exclusive distinction. Personal pronouns are not obligatory in clauses containing verbal predicates.

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>NSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>te</td>
<td>yer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yerBu</td>
</tr>
<tr>
<td>2</td>
<td>ai</td>
<td>ar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>arBu</td>
</tr>
<tr>
<td>3</td>
<td>woB</td>
<td>noB</td>
</tr>
</tbody>
</table>

Table 4 - Momu free-standing pronouns

1.4.3.4.6 Possession

Momu has several strategies for expressing possessive relationships, one of which is clearly dependent-marking and a second which is clearly head-marking. Dependent-marking only occurs where the possessor is a proper noun, in the structure of the possessed noun followed by the possessor followed by the possessive marker $u$. This is shown in the following example.
(24)  fak Steven u
  house Steven POSS
  *Steven's house

However there are also occasional examples of head-marking when the possessor is a proper noun. These occur in a structure containing the possessor followed by the possessed noun followed by \( u \). This is demonstrated in following example.

(25)  Simon fak u
  Simon house POSS
  *Simon's house

When the possessor is an object the head-marking strategy is always used, as in the following example.

(26)  kaf kei u
  cup hand POSS
  *the cup's handle

An intermediate case occurs when the possessor is pronominal. The possessive pronouns are morphologically complex, created from a combination of the free pronoun forms and the possessive marker \( u \), however not entirely transparently. The following table shows the possessive pronouns. The categories containing multiple forms reflect different variants collected during fieldwork. The reasons for the alternations are not yet understood.

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>NSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>to</td>
<td>yeru/neru</td>
</tr>
<tr>
<td></td>
<td>teBu</td>
<td>yerəBu/nerəBu</td>
</tr>
<tr>
<td>2</td>
<td>aiyu</td>
<td>arəBu</td>
</tr>
<tr>
<td></td>
<td>aBu</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>wou</td>
<td>neBu</td>
</tr>
<tr>
<td></td>
<td>woBu</td>
<td>ninu</td>
</tr>
</tbody>
</table>

Table 5 - Momu possessive pronouns
The pronominal possessor follows the possessed entity, however the possessive marking cannot be entirely separated from the possessor, and hence it is not clear whether possession is marked for the possessor or the possessed entity. Possessive pronouns can be used with both animate and inanimate possessors, and for both alienable and inalienable objects. These combinations are shown in the examples below.

(27) man mak woBu
    string.bag middle 3SG.POSS
    the middle of the string bag

(28) fak to
    house 1SG.POSS
    my house

(29) mwena to
    ear 1SG.POSS
    my ear
1.5 The nature of spatial language

The physical environment is made up of infinite components involved in a complex network of relationships with one another. The primary function of spatial language is to provide a fixed structure or set of structures by which a spatial scene may be described, a process which involves attending to particular aspects of a scene, while disregarding the remainder (Talmy 1983: 225, 229). This structure rests on a fundamental dependency between two or more elements, which may be entities or events. The spatial disposition of a primary element within a scene is characterised with respect to a secondary or sometimes tertiary element. A variety of terms are used in the literature for the primary entity to be located and the secondary entity with respect to which it is to be located. These include 'figure' and 'ground' (Talmy 1983), 'theme' and 'relatum' (Gruber 1965), 'referent' and 'relatum' (Miller and Johnson-Laird 1976) and 'trajector' and 'landmark' (Langacker 1987). This thesis will follow recent trends (Levinson 2003 and Levinson and Wilkins 2006a,b) and adopt the Gestalt terminology introduced by Talmy, 'figure' and 'ground'.

Figure 5 - Conceptual subdivisions of the spatial domain. Diagram adapted from Levinson and Wilkins (2006a: 3).
Spatial language naturally divides into conceptual sub-domains as illustrated in Figure 5. The first partition divides the spatial domain into stasis versus kinesis, or stationary locative descriptions versus those involving motion. Expression of static location can be further subdivided into two main classes. These classes are distinguished according to the presence or lack of directional specification in the expression of a locative relation between figure and ground. The first class does not involve such specification, and requires instead that a figure be co-locational with the ground entity, or else a close approximation thereof. This class covers the domains referred to in the literature as topology and toponomy. Topology deals with the spatial coincidence or near-coincidence of figure and ground, examining subtypes of such relations, which include proximity, contact and containment. Toponymy concerns the study of placenames, and hence toponymic relations involve a figure located at a particular named place, as in the example 'the Opera House is in Sydney'. These two domains are differentiated analytically because they typically utilise different resources in the expression of spatial relationships. Toponymic relations are often treated as special instances of spatial relations, occurring with their own specific locative case, adposition or other distinct construction (Levinson 2003: 66-67). However in Momu the two domains are assimilated to the same system of linguistic expression, and will therefore not be given separate treatment in this thesis.

---

5 There is no definition of topology in the linguistic literature; rather it is usually explained as dealing with a particular group of spatial relationships, namely those involving spatial coincidence or proximity. Most topological relationships, for example 'at' and 'near', express relations between objects of undistinguished size and shape and do not express angular information. However some do involve properties of the ground object; for example 'in' generally requires the ground object to have some kind of hollow to contain the figure; and others do involve the vertical dimension, for example 'under'. The linguistic term is derived from the mathematical notion of topology, the study of geometrical properties that remain constant under transformation or deformation, and are preserved in the absence of metric angle or distance. However the linguistic conceptualisation of topology is broader than the mathematical sense, and includes some spatial relationships that are not strictly topological. The term was first introduced to the linguistic literature by Piaget in his study of child acquisition of spatial language; who noticed that it was such topological relationships that were typically acquired earliest (Levinson 2003: 71-74).
The second class of static locative expressions occur when the figure and ground are located at some distance from one another in space, such that it is necessary to provide a direction in which to locate the figure with respect to the ground. This involves using some kind of a coordinate system, or system of directional specification, what is referred to in the literature as a 'frame of reference'. There are three frames of reference available to linguistic expression, the 'intrinsic', the 'relative' and the 'absolute', which differ in their conceptualisation of angular coordinates. These will be explained and examined as they apply to Momu in Chapter 3.

This thesis will be organised in sections reflecting the major partitions of the diagram above. Chapter 2 will examine the resources Momu has to describe non-angular static locative scenarios, while those requiring angular or directional specification will be described in Chapter 3. Chapter 4 will investigate the expression of motion. The resources Momu uses to ask spatial questions and to express notions of deixis cross-cut all the subsections of the spatial domain. Thus they will be dealt with separately in short chapters (5 and 6) at the end of the thesis.
CHAPTER 2 STATIC LOCATION

This chapter will explore the semantic and syntactic resources Momu uses to express static location. It will begin with a description of the Momu Basic Locative Construction (BLC). The BLC is a term originated by Levinson and Wilkins (2006a: 15-17) to describe the predominant construction a language uses in response to the question 'where is X?'. It is typically used in what have been described as 'basic' spatial scenarios, where the figure is small, inanimate and moveable and in a prototypical relationship with a stable ground entity. As spatial relationships become less 'basic', for example when the figure is animate, in an unusual position or when it is attached to the ground, it is less likely the BLC will be used to describe them. The BLC has proved to be a useful cross-linguistic comparison tool, a functional equivalent that allows direct comparison of the structural resources used to describe static locative scenarios, as well as the semantic properties they express. Examining the types of relationships expressed by the BLC has also allowed for comparison of the types of scenarios a particular language considers as basic.

This section will examine the Momu Basic Locative Construction, looking in detail at each of its components. It will then look at alternative means Momu has to express static location, by either altering or elaborating on the BLC, and the types of scenarios considered less 'basic' where these alternative structures are required or preferred to the BLC.

2.1 Basic locative construction

The basic locative construction in Momu can be schematised as follows. Optional elements are indicated in brackets:

Figure + Ground + (spatial nominal) + (case) + (postposition) + locative verb

Figure 6 - Basic locative construction

The BLC contains a figure which is expressed as the subject argument of the verb, followed by the ground. The ground is sometimes followed by a spatial nominal expressing the
topological relation between figure and ground. Whether the spatial nominal forms a compound with the ground referent, or simply follows it as an independent word in the noun phrase, is at this stage undetermined. The final element of the noun phrase expressing the ground object is suffixed with the case marking clitic -m, which marks locative relations among other things. This in turn can be followed by a postposition whose function is also to express topological information. Examples in the corpus which contain both a spatial nominal and a postposition are rare. The BLC concludes with a general locative verb which agrees with the figure, which is usually the subject argument. Each element of the BLC will be examined in detail in the sections below.

The following two examples show the basic locative construction with a spatial nominal (example 30) and a postposition (example 31).

(30) man to fsk kufiu-m youwo
    string.bag 1SG.POSS house under-CASE be.at.DIST.INAN.3SG
    my string bag is under the house

(31) man to efkaBo-m ni d youwo
    string.bag 1SG.POSS floor-CASE on be.at.DIST.INAN.3SG
    my string bag is on the floor

The minimum requirement for the basic locative construction is the figure, the ground and a locative verb, as shown in the following example.

(32) mi teBu Australia yaiwo
    mother 1SG.POSS Australia be.at.DIST.AN.3SG
    my mother is in Australia

The clitic -m is frequently omitted (see section 1.4.3.4.1 on page 19), and Momu does not require that topological information be expressed. While it is possible for any of the remaining elements to be omitted if they have already been established in the discourse, they must still be conceptually available to the interlocutors. This is illustrated by the response in the answer line of the question-answer pair below (example 33), where both figure and ground are omitted. The figure, Antonia, is established in the question line, and the ground, her house, is inferred from the extra-linguistic context as the question was posed outside
Antonia's house. The second example does not contain the locative verb. It was elicited after I had already asked for the locations of a long list of objects. The context demanded the description of locations and hence it was unnecessary to use the locative verb.

(33) Q: Antonia aiyta?
   Antonia stay.3SG-QUES
   *Is Antonia there?*

   A: naiwo, fi pə momu
   be.at.PROX.AN.3SG water go(SG.SUB) not
   *she's there, she hasn't gone to the water yet*

(34) man efkaBo-m ni’d
    string.bag floor-CASE on
    *the string bag is on the floor*

2.1.1 General locative verb

Since all other locative elements in a clause are potentially optional, the primary job of locating belongs to the locative verb. Momu has one general locative verb that is used in the expression of most static locative scenes. Locative relationships in the domains of toponymy and topology logically only require a binary relationship between the figure and ground entities, as in the examples 'the cup is on the table' and 'Hortense is in London'. However Momu requires a ternary relationship to be expressed by its general locative verb. This involves a relationship between figure and ground and a further deictic specification of proximity of the figure to the deictic centre of the speech act, which is usually the position of the speaker. It is difficult to posit an underlying root for this verb as it takes suppletive forms according to the animacy of the subject referent as well the proximity of the figure with respect to the deictic centre. The inflections for person and number are also slightly irregular. This verb will be referred to as the general locative verb and glossed with 'be at', together with its animacy, person, number and deictic properties.

The following paradigms are given to show the general locative verb in its various forms:
2.1.1.1 Animate figure

A thorough investigation needs to be done to ascertain what entities are understood to be animate in Momu. While the animate forms of the general locative verb were described by speakers as applying to 'anything that has life', the application stretched beyond humans, animals and plants to include some other entities, such as stones and plucked coconuts. The difference in the alternative options offered for second person singular, first person dual and third person dual are not yet understood.

<table>
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<th>SG</th>
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<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>naiya</td>
<td>nara/naraiwo</td>
<td>naru</td>
</tr>
<tr>
<td>2</td>
<td>naiyaf/naiyaf</td>
<td>nami</td>
<td>naiam</td>
</tr>
<tr>
<td>3</td>
<td>naiwo</td>
<td>nafi/nafiu</td>
<td>nasa</td>
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</tbody>
</table>

**Figure 7 - Proximal forms**

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</thead>
<tbody>
<tr>
<td>1</td>
<td>yaiya</td>
<td>yara/yaraiwo</td>
<td>yaru</td>
</tr>
<tr>
<td>2</td>
<td>yaiyaf/yaiyaf</td>
<td>yami</td>
<td>yaiam</td>
</tr>
<tr>
<td>3</td>
<td>yaiwo</td>
<td>yafi/yafiu</td>
<td>yasa</td>
</tr>
</tbody>
</table>

**Figure 8 - Distal forms**

2.1.1.2 Inanimate figure

As would be expected, inanimate forms only exist for the third person.

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>DU</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>nouwo</td>
<td>nofiu</td>
<td>nosa</td>
</tr>
<tr>
<td>3</td>
<td>youwo</td>
<td>yofiu</td>
<td>yosa</td>
</tr>
</tbody>
</table>
2.1.1.3 Proximal/distal distinction

The constraints on the choice of the proximal or distal form of the basic locative verb are not entirely clear. In the corpus the proximal form naiwo/nouwo is never used for locations more than a few metres from the speaker, however the distal form yaiwo/youwo was certainly used to locate figures at very close distances to the speaker, as in the example below.

(35) fi potu mwena to ten yaiwo
    water little ear 1SG.POSS in be.at.DIST.AN.3SG
    There's a little bit of water in my ear

An examination of the corpus reveals that there are actually very few examples using the proximal term in comparison to those using the distal form. The handful of examples that do use the proximal form fall into one of three categories.

The first category contains examples where the speaker wishes to emphasise the proximity of the figure. This is shown in the following example, which lacks the overt expression of the ground entity because it is understood to be the deictic centre.

(36) kaf anu fiki nouwo
    cup DEM.PROX near be.at.PROX.INAN.3SG
    This cup is near me

Examples in the second category involve situations where the figure and the deictic centre are identical, that is when the speaker locates him/herself.

(37) te nu kar ten naiya
    1SG ASP car in be.at.PROX.AN.1SG
    I’m in the car

However, there is one example in the corpus where the distal form yaiwo is used for a person referring to herself. This example was elicited by asking for the sentence 'I am behind the house', when the actual location of the speaker was in a clearing at some remove from a house. Hence the speaker chose the distal form yaiya to locate herself in a hypothetical position that was distal to her current location.
(38) te fok amku-ti yaiya
    1SG house back-DIR be.at.DIST.AN.1SG
    I'm behind the house

The third category contains examples where the speaker wishes to establish a clear contrast between a figure referent that is proximal and one that is distal.

(39) woB oto naïwo,
    3SG sit(SG.SUB) be.at.PROX.AN.3SG
    He's sitting here, but he's sitting over there

(39) woB oto yaiwo
    3SG sit(SG.SUB) be.at.DIST.AN.3SG

It appears therefore that the distal form is the unmarked form of the locative verb, and the proximal form is only used for emphasis or contrastive purposes, or in the highly specific situation where the figure and deictic centre are identical.

2.1.1.4 Location of abstract entities

There are two examples in the corpus of the general locative verb being used to relate more abstract entities:

(40) te amsu-m naïya
    1SG good-CASE be.at.PROX.AN.1SG
    I'm alright

(41) te ańki nōwō
    1SG sickness be.at.PROX.AN.3SG
    I'm sick

It is interesting to note the use of the animate first person singular form in example (40) and the inanimate third person singular form in example (41). As the general locative verb agrees with the figure, it appears that in example (40) the speaker is functioning as the figure and in example (41) as the ground. However in this second example if the speaker is indeed functioning as the ground then the usual order of figure and ground are reversed. More data would be required to provide an explanation for these alternations. Indeed, the conception of spatial relations for abstract entities would be an interesting subject for further investigation.
2.1.2 Case marker

As discussed in section 1.4.3.4.1 on page 19, the clitic -m is a general case marker of core grammatical relations, attaching to the final element of the noun phrase. In clauses expressing spatial reference it is used to mark the entity with respect to which the figure is located. This is the ground entity in locutions expressing static location and the goal, path or medium in motion locutions. However, as discussed earlier, -m is not always present and is probably only used to mark new or highly thematic information. The following example shows -m marking the ground entity in a static locative locution. Examples of -m marking goal, path and medium entities will be provided with respect to the discussion of motion in section 4.4 on page 75.

(42) man oko-m youwo
    string.bag ground-CASE be.at.DIST.INAN.3SG
*the string.bag is on the ground*

2.1.3 Spatial nominals

Momu has a set of nouns which denote a particular region adjacent to the ground entity. These spatial nominals follow the ground referent in the noun phrase, although the ground referent is often omitted if it is the deictic centre (usually the location of the speaker) or if it has already been established in the discourse.

The following spatial nominals are present in the corpus. (This is not necessarily an exhaustive list of all the spatial nominals in Momu):
amku      'behind' (literally 'back')
asfa      'beside' (literally 'fat padding over the kidney')
fukufu      'in front of' (literally 'chest')
wañkinu/sañkinu/kuñiu  'under'
tenu      'inside'
fiki/añki/skuB      'near'
maku      'far'
mak      'in the middle (of one object); between (two objects)'
kakfo      'left'
meni      'right'
mamo/famo      'other side'

The first three terms are identical to the body part closest to the region they identify, amku is the word for 'back', fukufu is the word for 'front' and asfa refers the fat padding over the kidneys on each side of the body. Other body parts do not have a secondary sense that expresses a topological relation. The semantic differences between wañkinu, sañkinu, and kuñiu are at this stage unclear. They were given in a variety of contexts that would be understood in English to mean the area underneath an object. The obvious similarity in their semantics is paralleled by a clear relationship in their phonological form. Similarly the semantic distinctions between fiki, añki and skuB and mamo/famo are at this state unclear.

The following example expresses the topological relationship of 'under' using the spatial nominal kuñiu.

(43)       man to fak kuñiu-m youwo
            string.bag 1SG.POSS house under-CASE be.at.DIST.INAN.3SG
            my string.bag is under the house

This contrasts with the following example, in which there is no spatial nominal expressing a specific topological relationship. Hence the only information that can be inferred is that the figure and ground are co-locational.

(44)       man to fak-m youwo
            string.bag 1SG.POSS house-CASE be.at.DIST.INAN.3SG
            my string.bag is at the house
When the ground entity is not overtly expressed it is understood to be the speaker, who functions as the deictic centre of the utterance. This is demonstrated in the following example.

(45) moBke fiki yaiwo  
coconut near be.at.DIST.INAN.3SG  
*The coconut is near me*

### 2.1.4 Postpositions

Momu has at least two postpositions which also define topological relations between figure and ground. These words are positioned after the ground entity, however they can be distinguished from spatial nominals in that they occur outside of the noun phrase. As with spatial nominals, the ground referent may be omitted if it is the deictic centre or if it has already been established in the discourse. While only two postpositions have been identified thus far, this does not exclude the possibility of the existence of more. These terms define spatial relationships of 'above/on' *ni*$\text{d}$, 'inside' *ten*. 

*ni*$\text{d}$ is used to relate one entity as being vertically higher than another. It is neutral to the possible contact distinction, as it subsumes meanings distinguished in English by the prepositions 'on' and 'above'. It is not used where there is contact but not a vertical relationship between figure and ground. Such situations call for specific verbs expressing notions of 'clinging' or 'sticking': for example *napeiyn*/*napeiyetai* was used to describe a post-it note stuck to a forehead and *Buarnai*/*naBuanai* was used to describe both a lizard clinging to a wall and a person clinging to a tree trunk.

The following two examples show different uses of *ni*$\text{d}$. In the first example it is used to mean 'on', as the situation involves contact between the figure and ground. In the second example *ni*$\text{d}$ expresses the meaning 'above'. This example lacks the overt specification of the ground entity, which is implicitly understood to be the deictic centre.
(46) moBkefu eBsi-m ni'd yaiwo
green.coconut leg-CASE on be.at.DIST.AN.3SG
The coconut is on the leg

(47) siesi afa ni'd nouwo
wind DET above be.at.PROX.INAN.3SG
There's a fan above.

ten is used to relate the figure as being 'inside' the ground. It covers a wide range of possible
types of insides, including complete enclosures such as the inside of buildings and car cabins,
partial enclosures such as buckets and cups and bodily cavities such as the ear canal. It can
also be used to locate a figure submerged in water, or in the area between the underside of a
stone and the ground. The following examples show the postposition ten locating the figures
in a variety of types of grounds.

Ground is a partial enclosure:
(48) sir bucket ten youwo
comb bucket in be.at.DIST.INAN.3SG
The comb is in the bucket.

Ground is water:
(49) wune fi ten yasa
stone water in be.at.DIST.AN.3PL
Stones are in the water

Ground is a bodily cavity:
(50) fi pstu mwena to ten yaiwo
water little ear 1SG.POSS in be.at.DIST.AN.3SG
There's a little bit of water in my ear

It is interesting to note that there is a corresponding spatial nominal meaning 'inside', which is
composed of ten followed by the possessive marker u. These words can be used together such
that the topological relationship 'in' is expressed twice. There is no such nominal correlate for
ni'd . The following example shows the spatial nominal tenu followed by the postposition
ten. The ground entity, the car, is not overtly expressed as it had already been contextually
established.
(51) Fiona, tenu ten oto-f-mu-fa?
Fiona inside in sit(SG.SUB)-2SG-ASP-QUES
Fiona, will you sit inside [the car]?

2.2 Beyond the basic locative construction

There are some situations Momu considers to be 'non-basic', the expression of which require that the BLC is altered or elaborated upon. This section explores these other resources Momu has for giving non-angular static locative descriptions, and the situations they are used to describe.

2.2.1 Postural and positional information

Rather than a general locative predicate, many languages have a small class of four or so positional verbs which are sensitive to both axial properties of the figure object, as well as the configuration of the figure and ground entities. This class usually includes human postural verbs such as 'stand', 'sit', and 'lie', but often also a verb meaning 'hang'. These verbs stand in semantic opposition, and the expression of a basic locative relation forces attention upon both the shape and position of the figure (Levinson 2003: 103).

While Momu does have the means to express such information, it is not a required part of the BLC. Rather positional information is only expressed for inanimate objects when the figure is in an unusual position or orientation, for example a stick standing upright. This information is expressed by placing a fully-inflected positional verb before the general locative verb, as in the following example.

(52) kuo fafo puenen yaiwo
stick long stand(SG.SUB).3SG be.at.DIST.INAN.3SG
The stick is standing over there

However when the figure is human, Momu expresses a strong preference for providing positional information together with the location, regardless of whether the figure is in an unusual posture or not. In contrast to the treatment of inanimate figures, for human figures the positional verb is reduced and uninflected for subject, following the pattern of serialised verbs.
The following intransitive verbs are found in the corpus expressing positional information.
Once again, this is probably not an exhaustive list of all such verbs in Momu, for example an intransitive verb meaning 'hang' is missing. With the exception of puenen 'stand', all these verbs express both stative and dynamic positional information, being equally suitable to express the notion that someone is currently in a particular position as that someone moves into that position. puenen/napuenen on the other hand is purely stative, and has a dynamic counterpart pufkun meaning 'get up'.

peptai  'crouch', 'kneel'
Buarnai/naBuarnai  'cling'
oton/otokta  'sit'
puenen/napuenen  'stand'
eki  'lean'
kisen/nakiseta  'lie'
san/sin  'stretch out' (for example an arm or a leg)

While all these verbs are inherently intransitive, they can be used transitively, with the meaning that the figure is placed in a position. This is done with a caused locative construction, and will be described in the section below.

2.2.2 Caused locative constructions

When a speaker has witnessed the action that brought a figure and ground into a particular spatial configuration, Momu prefers to express the locative relationship in a caused locative construction, rather than the basic locative construction described above. This construction expresses the realisation of the particular locative state. It contains two verbs in succession, firstly a transitive verb expressing the action that results in the locative relationship, followed by the general locative verb. The first verb takes the agent that brought about the spatial
scenario as its subject, while the general locative verb inflects for subject with respect to the figure being located. There are no examples of the figure being located receiving object marking. The most common verb used in this construction is *oton/Bun* 'put', but examples of *titi* 'hang', and *neBsi/tyeBsi* 'hold' are also attested. A small number of positional verbs can also be used in the caused locative construction. The following two examples show the caused locative construction. The first example contains the compound verb *otonok* 'put downwards' and the second the verb *titi* 'hang'. The second example clearly shows the action verb and the general locative verb inflecting for different subjects, 'hang' agreeing with the second person agent, and the distal form of the general locative verb agreeing with the third person inanimate object.

(54) Fiona wafkinu-ti oton-(w)ok youwo
Fiona cup under-DIR put(SG.OBJ)-move.down.3SG be.at.DIST.INAN.3SG
Fiona put the cup underneath [her bent-up legs]

(55) man aBu fsk niθd titi-f youwo
string.bag 2SG.POSS umbrella on hang-2SG be.at.DIST.INAN.3SG
You hang your string bag on the umbrella

This construction differs from a serialised verb construction in that the two verbs are fully inflected and agree with different subjects. In Momu serialised verb constructions, the two verbs have the same subject and the first verb is both reduced and uninflected for subject, as demonstrated above with regards to positional verbs.

It was always possible to elicit the basic locative construction in contexts where the speaker had seen the action that brought about the locative relationship, however this usually required further prompting after a caused locative had been given, indicating a strong preference for the caused construction. There are also examples in the corpus where the caused locative is used in contexts where the prior action that brought about the spatial relationship was not seen, but could be inferred. This is demonstrated in the following example, taken from a text where the speaker was describing the contents and layout of a hotel room.

(56) fidina eru anou titi-si youwo
mirror DEM.DIST big hang-3PL be.at.DIST.INAN.3SG
They've hung up a big mirror over there
Caused locatives can also be constructed with positional verbs, meaning that an agent has caused a figure to be in a particular position with respect to a ground entity. As explained above, the positional verbs are underlingly intransitive, and are made to function transitively with the transitive prefixes na- for a singular object and tye- for a non-singular object. An additional pronominal object prefix is used when the object is pronominal.

(57) te Luke efkaBo-m na-kisen
    1SG Luke floor-CASE TRANS(SG.OBJ)-lie(SG.SUB).1SG
    I lay Luke on the floor

(58) te ar-am ma-tye-oton
    1SG 2NSG-CASE 2NSG.OBJ-TRANS(NSG.OBJ)-sit(SG.SUB).1SG
    I’m sitting you two down.

As in purely stative constructions, positional information in caused constructions is only expressed for inanimates when the figure is in an unusual position, for example when a closed umbrella is leant against a post.

(59) te fsk kuo tye-ekedi yofiu
    1SG umbrella post TRANS(NSG.OBJ)-lean.1SG be.at.DIST.INAN.3DU
    I lean some umbrellas against the post

2.2.3 Specialised locative verbs

In addition to the general locative verb, there are two other locative verbs that have more restricted semantics.

2.2.3.1 ai

This verb is used exclusively to locate people. In its question form, it is the verb of choice to request the location of a person (see chapter 5). In declarative statements it seems to be restricted to expressing more transient ideas of location, for example the notion of ‘staying’ in a particular place for a short period of time, for example the house, the river or the garden, or a visit to another village or town.
(60) te aitape-m ai
1SG Aitape-CASE stay.1SG
I'm in Aitape

(61) te fi anou-m ai
1SG water big-CASE stay.1SG
I'm at the big river

It is not used for permanent location, where the general locative verb is preferred, for example in describing someone who lives in another place.

(62) mi teBu Australia yaiwo
mother 1SG.POSS Australia be.at.DIST.AN.3SG
my mother is in Australia

However there is some semantic overlap between ai and the general locative verb. There are examples in the corpus where the general locative verb is also used to express transient location, but these examples are less common. This is shown in the following example, which describes Julie as being on the mountain rising behind the village, a place where she often spent several days at a time processing sago.

(63) Julie oko Bofu-m yaiwo
Julie ground head-CASE be.at.DIST.AN.3SG
Julie is up the mountain

The locative verb ai also can be used for non-spatial meanings, as illustrated in the example below. In this example a young child is described as being small. This is a transient state, as the child will not always remain small. Hence this extension supports the analysis of this verb being used to mark transient location in its locative sense.

(64) peteku-m ai
small-CASE stay.3SG
[The child] is small at the moment

2.2.3.2 uta

The semantics of this verb are less well understood. It occurs most commonly in its question form, where it is used to discern the location of inanimate entities (see chapter 5). In its
declarative form there are very few examples. The majority of those that do exist describe a 
woman as being pregnant, literally locating a child in her stomach. It is possible that this 
verb, which typically locates inanimate entities, is appropriate because a foetus is not yet 
considered to be alive. This hypothesis is supported by the fact that the locative relation of a 
child being in the womb is also frequently expressed by nouwo/youwo, the inanimate form of 
the basic locative verb. In the following example several women describe themselves as 
pregnant, by locating a child in their stomachs. The first person non-singular inflection on uta 
agrees with the women rather than the babies being located.

(65) yer mu Baso ne*du-m uta-r-u 
1NSG woman child stomach-CASE be.at.3PL.? 
We women are pregnant

There is also an example of uta being used to state the existence, rather than the location of a 
of an abstract entity. The following example was elicited when I told my informants I had 
gathered enough data for the day and would carry on working the next day. They responded 
by saying that half of our work remained and we would talk tomorrow. In this case uta agrees 
with the figure, the remaining half of the work.

(66) yemkinu uta kaB eru momse-mu 
half be.at.INAN.3SG morning DEM.DIST talk-ASP 
Half [of the work] remains, will talk again tomorrow

2.2.4 Location of events and the progressive
Dynamic events are often located as wholes in constructions which utilise most of the 
resources of the basic locative construction. The general locative verb is replaced by the verb 
expressing the event, and as such deictic anchoring is absent.

(67) te fi petu-m fwas 
1SG water small-CASE wash.3SG 
I washed in the creek

(68) mu pǝtǝku fi-m fin 
woman small water-CASE swim.3SG 
The little girl was swimming in the water
However actions expressed in the progressive aspect require a proximal/distal distinction. This is due to the fact that a verb inflected for the progressive has a prefix and a suffix formed from the first and second syllables of the basic locative verb. The prefix therefore provides information about whether the action is taking place proximally or distally to the deictic centre. The suffix syllable agrees with the person and number values of the subject. As such it is likely that the basic locative verb is morphologically complex, its separate syllables forming something like a circumflex around verbs inflected for the progressive. This process is demonstrated in the following examples. In example (69) the progressive inflections are taken from yaiwo, the third person singular, distal and animate form of the basic locative verb. This accords with the third person singular form of the verb ku 'eat'. Hence both the progressive inflections and the main verb agree with the third person singular, animate subject. Example (70) has a first person singular subject, and this is reflected in both the agreement marking for first person singular on the main verb 'eat', as well as the progressive inflections drawn from naiya, the first person singular, proximal and animate form of the basic locative verb.

(69) Teresa tyako-m yai-ku-wo
    Teresa sleep-CASE be.at.PROX.AN-consume.3SG-3SG
    Teresa is sleeping over there

(70) te ku-m nai-ki-ya
    1SG food-CASE be.at.PROX.AN-eat.1SG-1SG
    I am eating here

As there are no instances in the corpus of inanimate subjects performing actions in the progressive, it is as yet unknown whether progressive inflections could be drawn from the inanimate forms of the basic locative verb, nouwo and youwo.

The majority of examples in the corpus of verbs inflected for the progressive aspect take the distal form. Examples of the proximal form only occur when the speaker is attempting to establish an overt contrast between an action being performed proximally as opposed to one being performed distally, or when the figure and deictic centre of the utterance are identical. As such the same analysis applies as that given for the basic locative verb: the distal form is the unmarked form of the progressive inflection.
Example (70) above shows an instance where the proximal form is chosen due to the figure and deictic centre being identical. The example given below illustrates the contrastive use of the proximal and distal form. I asked my informants how one would describe 'Tom eating over here', as opposed to 'over there', and hence received the verb 'eat' inflected firstly with the proximal form of the progressive and then secondly with the distal form.

(71)  
<table>
<thead>
<tr>
<th>Tom</th>
<th>ku-m</th>
<th>nai-ku-wo,</th>
<th>Tom</th>
<th>ku-m</th>
<th>yai-ku-wo</th>
</tr>
</thead>
<tbody>
<tr>
<td>food-CASE</td>
<td>be.at.PROX.AN-</td>
<td>eat.3SG-3SG</td>
<td>food-CASE</td>
<td>be.at.DIST.AN-</td>
<td>eat.3SG-3SG</td>
</tr>
</tbody>
</table>

*Tom is eating over here; Tom is eating over there*
CHAPTER 3   DIRECTIONAL SPECIFICATION

3.1 Frame of reference

Once a figure is at a physical remove in space from a ground entity, the basic locative construction is inadequate for expressing locative relationships. Rather it becomes necessary to provide an angle or direction extending from the ground referent by which to locate the figure. The specification of angular or directional information requires some kind of coordinate system, what is termed in the literature a 'frame of reference'. Extensive research into typologically diverse languages has revealed that there are just three frames of reference available to human spatial systems, known as 'intrinsic', 'relative' and 'absolute'. The following section will summarise the basic properties of each frame of reference, following the analysis given by Levinson (2003).\(^6\) Their differences will then be exemplified in relation to the picture in Figure 9 below.

\[\text{Figure 9 - Diagram which can be described with multiple frames of reference}\]

\(^6\) This use of the term 'frame of reference' to refer to a coordinate system by which directions are specified came into the literature through Gestalt theories of perception in the 1920s. Across different modalities and even within the field of linguistics there is some variation as to how the term 'frame of reference' is understood, as well as the names and properties assigned to the three frames of reference. Levinson (2003) has developed the most complete and coherent theory of 'frames of reference', and hence this analysis will draw on his theoretical framework.
3.1.1 Intrinsic frame of reference

In the intrinsic frame of reference, directions extending from the volumic centre through the named part or facet of the ground object provide a search domain in which to locate the figure. This necessitates the partitioning of the ground object into distinct parts or facets. Criteria for this assignation vary considerably cross-linguistically. Some languages utilise a variety of strategies. For example English sometimes relies on the canonical or functional orientation of the object (the front of a television is the side we watch), sometimes on the normal direction of motion (the front of a vehicle is the side that lies in the usual direction of motion), or sometimes on the characteristic orientation of user (the front of a building is the side we enter). Other languages have more consistent systems. For example Tzeltal partitions objects according to their internal axial geometry (primarily the length of axes and shapes of sides), regardless of the orientation of the object in space. Zapotec, on the other hand, uses a fixed gravitationally-oriented armature (the top is the upmost side and the bottom the downmost side), such that the facets will be reversed if an object is turned upside down (Levinson 2003: 78).

To describe the relationship between the ball and house in Figure 9 using the intrinsic frame of reference, one would say 'the ball is to the house's left'. Thus the ball is located in the region projected from the house's left side. If the observer was to wander around to the back of the house, or if the entire configuration of house and ball sat on a turntable which was rotated 180 degrees, the ball would still be at the house's left. Thus the intrinsic frame of reference involves a binary relationship between figure and ground, which remains constant irrespective of both the viewpoint of the observer, as well as the orientation of the entire figure-ground configuration in space.

3.1.2 Relative frame of reference

In the relative frame of reference, directions are mapped onto a scene from the observer's own axes. The directions are usually taken from the six planes of the human body, 'back' and 'front', 'left' and 'right' and 'up' and down'. This requires a ternary relationship between figure,
ground and a distinct viewpoint. This is usually the speaker, however directions can be
assigned from someone else's viewpoint, as in the example 'John kicked the ball left of the
goalpost'. Relative coordinates can logically be mapped onto a figure-ground configuration
by a process of either translation (shifting across of coordinates without rotation or
reflection), rotation or reflection. All three strategies are attested cross-linguistically, with
some languages utilising more than one. English, for example maps 'left' and 'right' by
translation, but 'front' and 'back' by reflection.

Using the relative frame of reference, the scene in Figure 9 would be described with the
locution 'the ball is to the right of the house'. Thus the ball is located with respect to the house
in the direction mapped via translation from the observer's own right side. However if the
observer was to wander around to the other side of the house, such that he was facing the
house's back wall, the ball would now be on his left side and he would describe the ball as
being 'to the left of the house'. Hence in the relative frame of reference, directions involve a
ternary relationship between figure, ground and viewpoint, and the directional specification
will change if the viewpoint shifts.

3.1.3 Absolute frame of reference
In the absolute frame of reference, directions are determined by fixed bearings derived from
environmental cues. These can be based on a great variety of sources, for example the solar
compass, wind directions, river drainage, mountain slopes, and sidereal motion\(^7\). There are
two major types of absolute systems. The first type, 'cardinal systems', have axes which are
abstracted completely from environmental cues such that they can be related by an analyst to
compass bearings. Hence they can be transported to a new environment and used accurately
without reference to any fixed landmark. The second type, 'landmark systems', have axes that
are anchored in the surrounding environmental cues and are not abstracted. Directions are
always calculated with respect to the actual location of the fixed landmark.

\(^7\) Bill Palmer's (2005) findings from a preliminary survey suggests a strong correlation between the
topographic environment of the language locus and the source of its absolute frame of reference.
Using the absolute frame of reference, the scene in Figure 9 would be described as 'the ball is east of the house'. Thus the location of the ball with respect to the house is determined by its bearing provided by the magnetic compass. This bearing remains fixed no matter where the observer is situated. Thus the absolute frame of reference requires a ternary relationship between figure, ground, and the fixed landmark or abstracted axis that provides the directional bearing. The direction remains constant regardless of the location of the viewpoint.

3.2 Frames of reference in use

Languages vary as to the extent to which they have each of these three systems available to them, and the situations in which they make use of them. Many languages predominantly use just one or two frames of reference, and have restrictions on the types of situations where each can be applied. Preference for a particular frame of reference is often determined by the scale of the situation. For example, English has all three frames of reference available but does not use the absolute (the cardinal system) in small scale space. However this is not a cross-linguistic generalisation. For example being told to 'watch out for the bull-ant to the north of your foot' would sound extremely odd to an English speaker, but perfectly natural to a speaker of Guugu-Yimidhirr, an Australian language which relies almost exclusively on the absolute frame of reference (Levinson 2003: 4).

Momu appears to use only the absolute and intrinsic frames of reference to conceptualise spatial relations. There is no use of the relative frame of reference in the corpus, and all overt attempts to probe for it failed. In the corpus the intrinsic frame of reference is only used for small scale space. There are no examples of figures located intrinsically when they are more than a few metres from the ground. This is not to say that it is impossible to locate objects intrinsically at greater distances, however the preference is clearly to locate such objects absolutely. Conversely, the absolute frame of reference is rarely used in small scale space. The only examples where it is used as such in the corpus are when the intrinsic frame of reference is inadequate, for example to identify regions projected from objects that have undifferentiated parts, such as the sides of a piece of cardboard. The following sections will explore how these two frames of reference are realised in Momu.
3.2.1 Directional clitic

The predominant means of providing directional specification in static locative locutions is the directional clitic -ti. This clitic attaches to the final element of a noun phrase containing an entity which functions as a directional anchor. Thus the figure is understood to be located in the direction of the cliticised entity from the deictic centre. This is demonstrated in the following example, where the speaker describes her house as being located in the direction of the river road with respect to the place we were standing at the time of utterance.

(72) fak to fi kos-ti youwo
    house 1SG.POSS water road-DIR be.at.DIST.INAN.3SG
    my house is in the direction of the river road [from where I'm standing]

-ti is used for directional marking in both the intrinsic and absolute frames of reference. It combines with spatial nominals, ordinary nouns, demonstratives, question words and entire clauses, which can all provide the directional anchor with respect to which the figure is located. The following examples show -ti following these different constituents:

After a spatial nominal:

(73) kaf fuku-ti youwo
    cup front-DIR be.at.DIST.INAN.3SG
    the cup is in front of me

After an ordinary noun:

(74) fak to fi kos-ti youwo
    house 1SG.POSS water road-DIR be.at.DIST.INAN.3SG
    my house is in the direction of the river road (from where I'm standing)

After a demonstrative:

(75) fuku anou-we eru eru-ti youwo
    place big-EMP DEM.DIST DEM.DIST-DIR be.at.DIST.INAN.3SG
    The big bed is over there.

After a question word:

(76) te Boko-ti ai-ta?
    1SG where-DIR stay-QUES
    Where am I?
After an entire clause:

(77) woB puene yaiwo-ti-fa?
    3SG stand(SG.SUB) be.at.PROX.AN.1SG-DIR-QUES
    [Is it located] in the direction where she's standing?

-ti differs from -m as it locates a figure as being in the direction of a ground object rather than co-locational with the ground. This is shown in the following examples, where a house which stands beside the edge of the bush is located as being in the direction of the bush (example 78), and the garden is located as actually being in, or co-locational with the bush (example 79).

(78) fak to oku-ti youwo
    house 1SG.POSS bush-DIR be.at.DIST.INAN.3SG
    my house is in the direction of the bush

(79) Q: mwieke aBu mena-m uta?
    garden 2SG.POSS where-CASE be.at.INAN.3SG-QUES.3SG
    Where is your garden?

    A: oku-m youwo
    bush-CASE be.at.DIST.INAN.3SG
    In the bush

However there is a small overlap between the use of -m and -ti. This will be discussed with regards to the intrinsic frame of reference in section 3.2.2 below. The use of -ti with the absolute frame of reference will be discussed in section 3.2.3.2 on page 59.

3.2.2 Intrinsic frame of reference

As explained above, the intrinsic frame of reference involves the partitioning of the ground object into distinct parts or facets from which directions can be projected. Heine (1997, cited in Levinson 2003) argued that intrinsic systems grow out of topological systems through a grammaticalisation chain. Body part terms becomes generalised to object terms, which in turn come to represent a highly restricted area adjacent to those parts, and finally to project large search domains from those parts. This close relationship between the two systems is evident in Momu. Momu forms locutions using the intrinsic frame of reference by drawing
on the small set of spatial nominals which it also uses to express topological relations (some of which are polysemous with their corresponding body parts). Rather than using the locative case, Momu uses the directional suffix *-ti* to express that the figure is located in the direction projected from a particular region, rather than within the region itself.

As was shown for topological relations, when the ground is the deictic centre (the speaker), it is usually omitted, as in the following example.

(80) kaf amku-ti youwo
cup back-DIR be.at.DIST.INAN.3SG
*The cup is behind me*

(81) sioko afa kakfo-ti nouwo
door DET left-DIR be.at.PROX.INAN.3SG
*There is a door on my left*

There is some overlap between the topological and intrinsic systems, as shown in the following two examples which were given as viable alternatives to describe the same spatial relationship.

(82) sila osi amku-m yaiwo
Sila Osi back-CASE be.at.DIST.AN.3SG
*Sila is behind Osi*

(83) sila osi amku-ti yaiwo
Sila Osi back-DIR be.at.DIST.AN.3SG
*Sila is behind Osi*

Example (82) locates the figure as being in the area adjacent to the back of the ground figure, a topological relation. Example (83) locates the figure as being in the region projected from the back of the ground figure, an intrinsic relation. My informant felt that both examples were acceptable, but that the second example was preferable. As there is very little use of the intrinsic frame of reference in the corpus, there is insufficient evidence to decide the limits of the adjacent area where a topological relation may be used. Similarly at this stage it is unknown how close a figure and ground may be for the intrinsic relation to be acceptable. This is a topic for further investigation.
Of the few examples in the corpus that use the intrinsic frame of reference, the majority have the ground object as the deictic centre (the location of the speaker) and all but one have the ground object as human. The one example with a non-human ground object is given below. The figure is located as being in the region projected from the back of the house. The back of the house is assigned in the same way that an English speaker would, as the side opposite to the side of the entry.

(84) te fɔk amku-ti yaiya
    1SG house back-DIR be.at.DIST.AN.1SG
    I'm behind the house

3.2.2.1 Partitioning of objects

In absence of more examples we can only speculate as to how the intrinsic frame of reference works with respect to non-human objects. When asked to label the parts of a variety of objects, speakers used a combination of strategies, the analogy of shape and function to humans body parts and their tools, as well as the inherent internal geometry of the objects themselves.

3.2.2.1.1 Parts assigned by properties of internal geometry

All objects are described as having a mak 'middle'. The shape of the object seems to be irrelevant, as it can either be one-dimensional, for example a line drawn on the ground, two-dimensional, for example a circle drawn on the ground, or three-dimensional in a variety of shapes, for example a stick, a string bag or a lamp.

Most objects have a nemu 'base'. This is usually the end that they canonically stand on, for example the bases of cups, lamps, buckets, or string bags. This assignation is clearly based on internal geometry rather than a fixed vertically oriented armature, as the base of a bucket is still its base when the bucket is turned upside down. The nemu of a pen, on the other hand, is assigned on functional critiera, as the opposite end to that which is used to write with. The term nemu does not apply to the base of tree trunks or stems of grass, which instead have the
specialised term *mofu*, which also refers to the essence, message behind or meaning of a story.

Any holes or negative space in an object will be labelled as such with *tenu* 'inside'. Examples include the holes in the handles of a pair of scissors, the inside of a cup and many bodily cavities, for example the nostrils and the anus.

### 3.2.2.1.2 Parts assigned by analogy to human body parts

*kei* 'arm' is used for the handle of a lamp and a cup, but not for the handles of bilums (string bags) and limbuns (bark baskets) which have a special word for their sling-like handle, *fwaiko*, *yefko kos* 'mouth road' is used for the rim of a cup, bilum and bucket. Interestingly, the human lips are called *yefko au* 'mouth skin', rather than *yefko kos* 'mouth road'. *seBto* 'nose' is used for the tip of a pen or a mustard stick, picking up on the shared pointed protrusion these objects share with a human nose.

### 3.2.2.1.3 Parts assigned by functional analogies

The cover of a book is described as the 'skin' *au*, and the pages are described as the meat *ameno*. *tetu* 'knife' was used to name the blades of a pair of scissors.

### 3.2.2.2 Object partitions and the intrinsic frame of reference

At this point it is unknown whether any of these part labels are simply partonyms or whether they can project search regions, and hence be used to provide directional specification in the intrinsic frame of reference. Further investigation would be required to find out if a sentence such as the following is possible:

```
(85) ? eBsi kaf kei-u-ti youwo
    betel.nut cup handle-POSS-DIR be.at.DIST.INAN.3SG
    The betel nut is handle-wards of the cup
```
3.2.3 Absolute frame of reference:

3.2.3.1 Cardinals

Momu has a system of absolute bearings anchored in the features of the surrounding physical terrain. Its primary axis is fixed along the course of the Piore River, which rises in the Eastern region of the Bewani Mountains and extends roughly 40km north-east to where it empties into the Pacific Ocean just north of Mainya (Sissano) (see the map contained in Figure 3 on page 8). This axis is divided into half-lines distinguishing two basic directions, upriver towards the source of the river and the mountains, and downriver towards the mouth of the river and the coast. Further subdividing these basic directions is a deictic specification of the direction towards versus the direction away from the deictic centre of the utterance (usually the location of the speaker). These directions are lexified in the verbal roots won 'upriver and away from the deictic centre' nua 'upriver and towards the deictic centre', wok 'downriver and away from the deictic centre' and kou 'downriver and towards the deictic centre'. In addition to these four directions distinguished on the primary axis is an orthogonal axis on which the two half-lines are not differentiated, but rather both ends are labelled with the same terms. This axis also makes the deictic distinction of away from the speaker wou versus towards the speaker nou, yielding two directions that have the location of the deictic centre as their reference point.8 These directions are illustrated in the following diagram.

8 Penelope Brown (2006) documents a similar system in Tjenejapan Tzeltal. The primary axis is based on the general lie of the land, distinguishing an 'uphill' and 'downhill' direction roughly equivalent to north and south. These directions are abstracted and are used to indicate a particular direction regardless of the actual incline of the land in any particular location. Like Momu, the secondary orthogonal axis distinguishes only one axis 'across', and labels both ends with the same terms. However, unlike Momu, the Tzeltal cardinals are not further subdivided according to deictic distinctions.
Levinson (2003) describes two kinds of absolute systems, firstly 'cardinal systems' where fixed axes are abstracted from environmental cues such that they can be related by an analyst to compass bearings, and hence transported to a new environment and used accurately without reference to any fixed landmark. The second type, 'landmark systems', have axes that are anchored in the surrounding environmental cues and are not abstracted. Directions are always calculated with respect to the actual location of the fixed landmark. An intermediate case is represented by the riverine systems of Alaskan languages, which have fixed bearings that are abstracted across vast drainage areas, but are then reset when one moves into a new river system (Levinson 2003: 90-91).

Momu does not have a true cardinal system, with fixed axes measurable in terms of fully abstracted compass bearings. This can be demonstrated by the manner in which speakers used the absolute system in the provincial capital, Vanimo. Vanimo does not sit on the Piore river or any other river, but rather sits on a circular piece of land that juts outwards from the coast (see map in Figure 3 on page 8). Here the directions *won, nua, wok* and *kou*, which are
anchored to the river axis in Mori, were superimposed on a new axis, the roughly straight line provided by the northern coast. The north-west direction was defined by the upriver terms *won* and *nua* and the south-east direction by the downriver terms *wok* and *kou*. The orthogonal axis was defined as towards the coast *nou* or away from the coast *wou*. Given that the angle of the coast at Vanimo is at a roughly 45 degrees clockwise rotation from the angle of the Piore River, the axes cannot be fixed in terms of fully abstracted compass bearings.

My hypothesis is therefore that the Momu system functions like the Alaskan riverine systems and the angular coordinates of the river axis are only abstracted in the drainage area of the Piore river. The angular coordinates are probably reset when one crosses into a new river drainage system. If there is no river available, a new environmental feature that can provide a suitable axis is sought out, as evidenced by the superimposing of the new coordinates onto the northern coastline at Vanimo. This hypothesis would be confirmed or refuted by investigating the use of the cardinal directions in other Momu speaking villages such as Kilifas, Fas and Sumumuni, which sit on different rivers flowing in entirely different directions.

A further point yet to be investigated is whether the angular directions provided by the cardinal roots vary according to the particular angle of the river at any one point along its course. Unfortunately I was unable to investigate this with respect to the Piore river. I was only able to take compass measurements at the villages of Savamui, Mori and Sumo, where the river happens to run in a roughly straight line, such that the compass measurements for each of the two axes were roughly identical. This aspect of the absolute system would be determined by taking measurements at Mainya (Sissano), which also sits on the Piore river, but beyond a major bend that sets the course of the river at roughly a 135 degree clockwise rotation from the angle of the river at Mori.

The Momu 'cardinals' can be summarised as follows, with their glossing abbreviations indicated in brackets:
Alternative forms were occasionally given in spontaneous speech for the three directions involving movement away from the deictic centre. These were yan instead of won, yak instead of wok, and yai instead of wou. When probed, informants seemed reluctant to use the alternative forms, insisting that they were older forms and were not as good as the others. Most speakers felt they were acceptable for some person/number combinations and not others, however a general consensus as to which combinations were acceptable could not be established. For example, some said first and second person forms were acceptable but third person forms were not, where others said singular forms were acceptable but non-singular forms were not.

3.2.3.2 The absolute frame of reference in static locative descriptions

My understanding of the cardinal directions developed primarily in relation to their use in motion descriptions and will be discussed in this capacity in section 4.2.1 on page 69. How they operate in static locative descriptions is currently poorly understood, but the following section will sketch out what can be surmised in relation to the small amount of data present in the corpus.

While the cardinal directions are underlyingly verbal roots, they are not used as verbs in static locative descriptions. Rather the direction always takes the form of a particle derived from the third person singular inflection of the verbal root, regardless of the person and number value of the figure functioning as subject. The direction then requires a locational anchor, which is usually one of the deictic demonstratives anu 'here' or eru 'there', marked with the directional clitic -ti. However another landmark situated in the appropriate direction can provide the locational anchor. These possibilities are shown in the examples below. In
example (86) the distal demonstrative *eru* is the locational anchor. In example (87) the source of the river *fi fuku* fulfils this function.

(86) fak steven u won eru-ti youwo
    house Steven POSS upriver.away DEM.DIST-DIR be.at.DIST.INAN.3SG
  *Steven's house is upriver.*

(87) won fi fuku-ti-fa?
    upriver.away water place-DIR-QUES
  *[Is it] in the direction of the source of the river?*

A figure cannot logically be described as being 'upriver', 'downriver', or 'across' without being located with respect to a ground object. In the corpus there are no examples with an overtly expressed ground object, of the kind 'the tree is upriver of the house'. Rather, for the vast majority of examples the figure is located with respect to the deictic centre, the location of the speaker.

As was discussed above, each of the three primary cardinal directions 'upriver', 'downriver' and 'across' are further subdivided according to the distinction of 'toward' or 'away from' the deictic centre. With respect to static location, these deictic anchorings correspond to the direction one's gaze moves in order to fixate upon an object. This will usually be outwards, from oneself towards the object, requiring the term *won* 'upriver', *wok* 'downriver' or *wou* 'across'. This is shown in the examples below. As with the basic locative verb, the proximal demonstrative is only used as the locational anchor when the speaker wishes to emphasise the proximity of the figure to the deictic centre. The distal form is the unmarked term and is used on most occasions.

(88) fak steven u won eru-ti youwo
    house Steven POSS upriver.away DEM.DIST-DIR be.at.DIST.INAN.3SG
  *Steven's house is upriver.*

(89) Fiona wou eru-ti oton-ya
    Fiona across.away DEM.DIST-DIR sit(SG.SUB).3SG-EMP
  *Fiona is sitting across over there*
(90) mwieke woBu won anu-ti nouwo

His garden is upriver away DEM.PROX-DIR be.at.PROX.INAN.3SG

The only time when the 'toward' directions are used for static locative locutions is when the speaker's gaze has previously been on one object and moves to locate another that is closer to him/herself. This was demonstrated in a contrived scenario I set up, involving four upside-down cups arranged with respect to the speakers as in the diagram in Figure 11 below. I singled out two cups at a time by placing a stone on top of each of them and asked my informants to describe which cups the stones were on. I did this for four separate pairs of cups. I then shifted myself and my informants to the other side of the cup arrangement and repeated the whole exercise.

![Diagram of four cups with deictic centre](image)

Figure 11 - Contrived cup scenario

3.2.3.2.1 The upriver/downriver axis

I asked firstly for the location of cups three and four. Thus, in order to locate them, my informants' gaze moved downriver and away, and hence the cardinal term wok was selected. Of the two sets of cups, 3 and 4 were the furthest from the deictic centre and so the distal demonstrative eru was chosen as the locational anchor for the cardinal direction.
I then asked them to locate cups 1 and 2. To do this my informants shifted their gaze from cups 3 and 4 back upriver and towards the deictic centre. Hence they chose the corresponding cardinal direction *nua*. Because they were locating the proximal set of cups, the proximal demonstrative *anu* was chosen as the locational anchor.

When I shifted our location to the downriver side of the cups, the same system of directional allocation was applied in the reverse. In the diagrams below cups 1 and 2 were described as *won eru-ti*, 'upriver, away and distal', and cups 3 and 4 were described as *kou anu-ti*, 'downriver, toward and proximal' as my informants' gaze shifted back downriver towards the proximal set.
More data is desperately needed to properly understand the complexities of this system. Consideration of the above data poses the question of whether the descriptions would have differed if I had asked for the proximal pair of cups instead of the distal pair of cups first. If the above analysis is correct and the assignment of directions is in accordance with the gaze of the speaker, I should have been told (when the deictic centre was in position 2) that cups 3 and 4 were won anu-ti 'upriver, away and proximal', and that 1 and 2 were won eru-ti, 'upriver, away and distal'.

### 3.2.3.2.2 The orthogonal axis

The same principle of directions being assigned in accordance with shifting gaze applied on the orthogonal axis, with cups 1 and 3 described as won eru-ti 'across, away and distal' and cups 2 and 4 described as nou anu-ti 'across, towards and proximal'. These descriptions were
the same when the deictic centre was located at position 1 and position 2, and as such only the diagrams for position one have been shown. Unfortunately I did not test shifting the deictic centre to the other side across from the configuration. However based on the above data one would expect that the terms *wou* and *nou* would apply to the opposite sets of cups.

![Diagram](image)

(95) **wou** eru-ti yofiu across.away DEM.DIST-DIR be.at.DIST.INAN.3DU
*They are across, away and distal*

![Diagram](image)

(96) **nou** anu-ti nofiu across.toward DEM.PROX-DIR be.at.PROX.INAN.3DU
*They are across, toward and proximal*

### 3.2.3.3 Ad hoc

In addition to the six fixed bearings, Momu also has a very productive system of creating ad hoc absolute bearings. These are formed by selecting a novel object or landmark to provide the locational anchor for the directional clitic *-ti*. Thus a new axis is formed extending from the deictic centre towards the selected location, providing a direction in which to locate the figure. My corpus of spatial reference contains a great variety of these ad hoc landmarks, for example the bush, the path to the river, the ladder of a house, and the location where I was standing. These ad hoc landmarks are demonstrated in the following examples.
(97)  fa=k to oku-ti youwo
    house 1SG.POSS bush-DIR be.at.DIST.INAN.3SG
    *my house is in the direction of the bush*

(98)  Butu neBu-ti
    ladder 3NSG.POSS-DIR
    *Turn it towards their ladder*

(99)  fa=k to fi kos-ti youwo
    house 1SG.POSS water road-DIR be.at.DIST.INAN.3SG
    *my house is in the direction of the river road (from where I'm standing)*

(100) woB puene yaiwo-ti-fa?
     3SG stand(SG.SUB) be.at.PROX.AN.3SG-DIR-QUES
    *[Is it located] in the direction where she's standing?*

All of these axes are created on the spot and may refer to landmarks within both large and small scale environments. It appears that the only constraint upon choosing such a landmark is that the addressee either knows of it or can see it. Such ad hoc absolute specifications appear as frequently in the corpus as those involving the cardinal directions, and as such there is no justification for ascribing any prominence to the cardinals as the primary system of absolute directional specification. ⁹

⁹ Gunther Senft (2006) documents a similar robust system of ad hoc landmarks in Kilivila, an Austronesian language spoken in the Milne Bay Province of Papua New Guinea. Kilivila also has a fixed and fully abstracted land/sea axis, but in any locative description speakers are equally likely to spontaneously create an axis from an ad hoc landmark.
CHAPTER 4 MOTION

Motion involves spatial change, the core of which is the concept of translocation, the durative displacement of a figure along a path-like trajectory (Levinson and Wilkins 2006a: 18). In addition to the bare fact of motion, a motion event can be decomposed into the following elements:

Figure - The entity which is moving.
Ground - The reference object with respect to which the figure is moving. This can be one of the following:
   - Source - The location from which the motion commences.
   - Goal - The location where the motion concludes.
   - Via point - The location passed by during motion.
   - Path - The physical path along which the motion takes place.
   - Medium - The substance in which the motion takes place.
Trajectory - The direction of motion.
Manner - A subsidiary action taking place concurrently alongside the motion.
Instrument - The means of motion.
Speed - The speed of motion.

The following sections will explore the resources Momu has to talk about motion by examining each of the conceptual subcomponents of the motion event in turn.

4.1 Basic verbs of motion

Previous sections have demonstrated that attention to deixis is central to the expression of static location in Momu. The following analysis will show that the conceptualisation of deictic notions is of equal importance in the motion domain. However in this domain it is not the proximity of the figure to the deictic centre that is attended to, but rather the direction of movement of the figure towards or away from the deictic centre. Momu has two basic verbs of motion that encapsulate this distinction, but lacks a general verb of motion that is deixis neutral.  pawina expresses movement away from the deictic centre, as in the English verb 'go',
and *puen/napuen* expresses movement towards the deictic centre, as in the English 'come'. These verbs are both underlyingly intransitive and have suppletive forms according to whether the figure is singular or non-singular.

These verbs are shown in imperative form in the following sentences. The goal of movement for both examples is the contracted forms of the deictic demonstratives, *anu* 'here' and *eru* 'there'. The deictic distinctions in the motion verbs correlate with those of the demonstratives. In example (101) the verb indicating motion towards the deictic centre has the contracted form of the demonstrative indicating proximity to the deictic centre as its endpoint or goal, and in example (102) the verb indicating motion away from the deictic centre has the contracted form of the distal demonstrative as its goal.

(101) Teresa, a-m puen-e
Teresa DEM.PROX-CASE come(SG.SUB)-IMP
*Teresa, come here*

(102) Teresa, e-m pən-e
Teresa DEM.DIST-CASE go(SG.SUB)-IMP
*Teresa, go over there*

The following example shows movement away from and then returning to the deictic centre, which is the location of the speaker at the point of utterance. Note that the verb indicating motion toward the deictic centre *puen* follows the cardinal direction of 'upriver and toward the deictic centre', *nua*. The specification of motion together with direction will be discussed further in section 4.2.1 on page 69.

(103) te Mafoka-m pən, nua puen
1SG Mafoka-CASE go(SG.SUB).1SG upriver.toward come(SG.SUB).1SG
*I went to Mafoka and came back*

The deictic centre is usually the location of the speaker, however it can also be transferred to the location of the addressee, as in the example below.

(104) te pue-meta
1SG come(SG.SUB).1SG-ASP
*I will come (to where you are)*
This parallels the use of the English deictic motion verbs. 'Go' usually expresses movement away from the deictic centre, and 'come' movement towards, however there are certain instances when the deictic centre is transferred to the location of the addressee, as when a child says to his mother over the phone 'I'm coming home in an hour'. However this is not a cross-linguistic generalisation. In the above example Japanese would require the equivalent of 'I'm going' (Levinson 1983: 83).

*pon* and *puen* can also be used transitively, to express the idea of causing an object to move toward or away from the deictic centre. This is done with the transitive prefix *na-* for a singular object and *tye-* for a plural object. If the object is pronominal an additional pronominal object prefix precedes the transitive prefix. This transitive use of *pon* and *puen* occurs most commonly in serialised verb constructions *nari napuen/ti tyepuen* 'bring' and *nari nepon/ti tyepon* 'take'. In isolation the verb *narin/tin* means to give birth. This parallels the Tok Pisin use of the verb *karim* 'to carry', which in isolation means to give birth, but in serialisation with the deictic verbs *kam* 'come' and *go* 'go' means 'bring' and 'take' respectively. Examples of *pon* and *puen* used transitively without serialisation with *narin/tin* are rare. The following examples show *pon* and *puen* used transitively in serialisation with *narin/tin*, to mean 'take' (example 105) and 'bring' (example 106). Example (107) shows *pon* used transitively without *tin*. As the object is pronominal, the first person non-singular object prefix *ma-* is present.

(105) te Baso tyeneBem fi-m ti tye-pe neBsi-mu
1SG child two water- carry(NSG.OBJ) TRNS(NSG.OBJ)-go(SG.SUB)

*I take the two children to the water and wash them.*

(106) te man nari na-puen
1SG string.bag carry(SG.OBJ) TRNS(SG.OBJ)-come(SG.SUB).1SG

*I bring the string bag.*

(107) Sandaun Motel rum ma-tye-pɔ-fi
Sandaun Motel room 1NSG.OBJ-TRNS(NSG.OBJ)-go(SG.SUB)-3DU

*They (two) took us to the room at Sandaun Motel.*
4.2 Trajectory

The specification of a trajectory or direction of motion is optional if a goal is provided, from which a direction of travel can be inferred. This is illustrated in the following two examples.

(108) te Sumui-m pən
1SG Sumo-CASE go(SG.SUB).1SG
I went to Sumo

(109) te Sumui-m wok pən
1SG Sumo-CASE downriver.away go(SG.SUB).1SG
I went downriver to Sumo

When the speaker wishes to overtly specify the direction of travel, Momu has several resources to do so. These are the cardinal verbs, the directional clitic -ti, and a handful of verbs which lexicalise specific trajectories together with the fact of motion in verbal roots.

4.2.1 Cardinal verbs

The most common means to express direction of motion is to use one of the six deictically anchored cardinal verbs, described above in section 3.2.3.1 on page 56. As discussed above, these verbs can be used to indicate the direction towards or away from the deictic centre either upriver, downriver or on the axis orthogonal to the river. In analysing these directional verbs when used in motion clauses, it has become apparent that these verbs do not inherently contain a motion element in their semantics. This is evidenced by the fact that they cannot appear independently of the basic verbs of motion pEn/ina or puen/napuen. Usually they occur as the reduced verb in serial constructions with one of these verbs, as demonstrated in the examples below.

(110) te kos-m wok pən
1SG road-CASE downriver.away go(SG.SUB).1SG
I walk downriver along the road

(111) te kos-m won pən
1SG road-CASE upriver.away go(SG.SUB).1SG
I walk upriver along the road
(112) * te kos-m wok
1SG road-CASE downriver.away
I walk downriver along the road

Alternatively the directional verb can be given in a separate clause, following the motion event, however it still requires the presence of the motion verb to express the fact of motion.

(113) yeB ina-rai eru, wok-rai
then go(NSG.SUB)-1DU DEM.DIST downriver.away-1DU
Then we (two) went downriver

4.2.2 Directional elitic

The corpus contains only three instances where the clitic -ti is used to mark direction in the expression of motion events. The first involves Where-questions, asking for the direction of travel (see Chapter 5).

(114) ai mena-ti pɔ-f-a?
2SG where-DIR go(SG.SUB)-2SG-QUES
Where are you going?

The second has the deictic proximal term anu marked with -ti to indicate motion in 'this' direction. This utterance was accompanied by a hand gesture to indicate the actual direction of travel.

(115) te anu-ti pɔn-mu-fa?
1SG DEM.PROX-DIR go(SG.SUB).1SG-ASP-QUES
Will I go this way?

The third instance does not mark the actual direction of travel, but rather that the person will walk backwards. This is the only use of the intrinsic frame of reference with respect to motion, and the interpretation relates to the particular side of the body that will lead the motion, rather than the direction of the motion. At this point it is unknown whether the intrinsic frame of reference can be used to express the direction of motion, for example in a clause that could translate as 'I will walk in the direction extending from my back'.
There are no examples of -ti encoding an absolute ad hoc direction towards which the motion is directed. This may simply be due to the fact that people far less frequently talk about moving in the direction of a landmark such as a particular garden or house without that being the actual goal or endpoint of the motion. When such entities are the goal of motion they are marked with the case clitic -m. This will be discussed further in section 4.4 on page 75. The use of the directional clitic -ti in motion clauses has not been probed and needs further investigation.

4.2.3 Trajectory encoding verbs

There are a number of verbs which conflate the fact of motion together with a particular trajectory in their semantics. These differ from the non-motion-conflating cardinals discussed above and do not appear in the serialised constructions with pon and puin; rather, the verbal root alone suffices to express motion. These verbs are restricted to expressing direction on the vertical axis and the highly specific trajectories of moving into and out of an enclosure.

4.2.3.1 Verbs indicating motion on the vertical axis

The following two verbs have identical lexical form to the cardinal verbal roots encoding the upriver direction, but express a secondary sense indicating motion upwards on the vertical axis. As in their primary cardinal usage, the use of the verbal roots to indicate motion upwards is also deictically anchored. won (and its alternate form yan) indicate movement upwards and away from the deictic centre, and nua indicates movement upwards and towards the deictic centre. This secondary sense clearly includes the motion element in its semantics, as it never appears in a serialised construction with the deictic motion verbs. Examples of these verbs used to express motion on the vertical axis are given below. In the first example the speaker describes climbing to the top of the tree from his current location on the ground,

10 The Tzeltal cardinal terms also have this secondary sense on the vertical axis. The 'uphill' term is also used to mean 'up' and the 'downhill' term to mean 'down'. (Brown 2006).
and hence the 'away from deictic centre term' won is used. In the second example the speaker describes coming up from underwater while standing on the river bank. This calls for the 'toward deictic centre' term nua.

(117) te kuo ni'd won
1SG tree above up.away.1SG
I climb to the top of the tree

(118) te fi-m tepwanai yar nua-ne
1SG water-CASE dive move.down.1SG up.toward.1SG-EMP
I dive down underwater and come up again

The verbs that express downwards movement on the vertical axis are not polysemous with the cardinal verbs indicating the downriver direction. Rather there are two independent verbs tu and wor (for which the alternate form yar was occasionally provided), which indicate downwards motion. Any semantic distinctions that may exist are at this stage unclear, as both were elicited in identical contexts, as shown in the following examples.

(119) te nu oko-m wor-mu
1SG ASP ground-CASE move.down.1SG-ASP
I'm going down now

(120) te nu oko-m yar-mu
1SG ASP ground-CASE move.down.1SG-ASP
I'm going down now

(121) te nu oko-m ti-mu
1SG ASP ground-CASE move.down.1SG-ASP
I'm going down now

These verbs are not deictically anchored, as they are all used for movement both towards and away from the deictic centre. This is shown by contrasting the above examples, in which the speaker expresses their inclination to move down from the veranda to the ground (movement away from the deictic centre), with the example below in which the speaker standing on the ground commands a child to come down from a tree (movement towards the deictic centre.)
Samson, imas ti-a!
Samson quickly move.down-IMP
Samson, hurry up and come down!

I'm going down now (from the veranda of the house)

4.2.3.2 Other verbs conflating trajectory and motion

The cardinal verbs which represent the directions on the orthogonal axis, *wou* (and its alternate form *yai*) and *nou*, also have a secondary sense. In this usage they mean to move inside or outside of an enclosure, for example a house. When used in this sense these terms express motion as an inherent part of their semantics, as demonstrated above for the secondary sense of the other cardinal verbs. All the examples attested in the corpus of the orthogonal cardinals in their secondary sense were elicited when the speaker was located outside of the enclosure referred to. *wou* was used to indicate movement inside and hence away from the deictic centre and *nou* was used to indicate movement outside and therefore towards the deictic centre. In all these example, the terms are used in accordance with the deictic anchoring of their primary cardinal sense. At this point it is undetermined whether these verbs mean to move inside or outside irrespective of their deictic anchoring. They could simply mean move with respect to an enclosure with their interpretation as 'in' or 'out' determined by the location of the deictic centre. This unknown could be resolved by observing whether the verbs are switched around when someone talks about moving out of or into an enclosure from the interior position.

I went inside the house and came out

4.3 Manner of motion

There are a few examples in the corpus of motion events which also express the manner of motion. In all of these examples the manner verb occurs in a serialised construction with one of the general motion verbs *pon/ina* and *puen/napuen*, or a specific trajectory-encoding motion verb such as *tu* 'move down'. This is shown in the following examples. In example
(125), pienen 'run' is serialised with pən to indicate motion away from the deictic centre whilst running. Examples (126) and (127) use the verb tu 'move downwards' to describe someone going down a palm tree, either intentionally with the manner verb sirinu 'slide' or accidentally with the manner verb sikenetia 'slip'.

(125)  
\[ \text{te imas pien pə-mu} \]
1SG fast run go(SG.SUB).1SG-ASP
*I'll run along fast*

(126)  
\[ \text{Samson emsi won yai-surina-tu-wo} \]
Samson betel.nut.tree up.away.3SG be.at.DIST.AN-slide(SG.SUB)-move.down.3SG-3SG
*Samson climbed up the betel nut and now he's coming down*

(127)  
\[ \text{te emsi tiai me(di yeB sikenetia-ti} \]
1SG betel.nut pluck like.1SG then slip(SG.SUB)-move.down.1SG
*I wanted to get some betel nut but I slipped down*

Whether a motion event can be expressed by manner verbs in isolation is at this point unknown.

Telic actions (actions with a definite endpoint) can become manners of motion when they are serialised with the verb ta 'do repeatedly' and one of the general motion verbs. This is shown in the following example with the verb ōkāri, 'step sideways'.

(128)  
\[ \text{te ōkāri ōkāri ta pən} \]
1SG step.sideways step.sideways do.REP go(SG.SUB).1SG
*I shuffle along sideways*

The following examples show the contrast between the verb titi 'jump' used without a motion verb, to indicate jumping on the spot, and then used with a motion verb to indicate movement while jumping. The first example has the verb titi in a serialised construction with ta 'do repeatedly' inflected for the progressive aspect to yield the meaning, 'I'm hopping up and down on the spot'. The second example has titi serialised with ta and then pən, to express the idea 'I hopped over and over whilst moving'.
(129)  te  øBsi  fasni  titi  ya-tai-ya
1SG  leg  one  jump  be.at.DIST.AN-do.REP.1SG-1SG
I hop on one leg on the spot

(130)  te  øBsi  fasni  titi  ta  pən,
1SG  leg  one  jump  do.REP  go(SG.SUB).1SG
fi-m   peni
water-CASE  arrive(SG.SUB).1SG
I hop along on one leg and arrive at the water

4.4  Ground arguments

As explained above, the ground component of a motion clause refers to the entity with respect to which the figure moves. Grounds can either be the 'goal' or endpoint of motion, the 'source' or starting point of the motion, 'via points' or locations passed by during motion, the 'medium' through which the motion takes place, such as air or water, or the actual physical 'path' along which the motion takes place. Languages vary as to which of these notions can actually be expressed as arguments of a motion verb. Momu marks ground arguments of motion verbs with the case clitic -m. However Momu only allows goal, medium and physical path notions to be expressed as arguments of motion verbs, leaving source and via notions to be treated in separate clauses. The following sections explore the different ways that Momu treats these five ground notions.

4.4.1  Goal

The goal does not have to be expressed as a known physical location, it can be a person or a more abstract entity such as 'work'. In these instances the physical goal is understood to be the place where the person or abstract entity is located. These possibilities are illustrated in the examples below.

Goal is a known physical location:

(131)  te  nu  savamui-m  pən-əmu
1SG  ASP  Savamui-CASE  go(SG.SUB).1SG-ASP
I'm going to Savamui
Goal is a person:

(132) te friiB afa kafnia-m pɔ
1SG evening DET Antonia-CASE go
Yesterday I went [to visit] Antonia

Goal is an abstract entity:

(133) toku-m ina-t
work-CASE go(NSG.SUB)-1PL
We went to work

4.4.2 Path

The path is a physical route along which the motion takes place. This is a distinct concept from
the trajectory, or direction of motion (which is often referred to as 'path' in the literature).
Examples of paths in the corpus include roads, the horizon (from the perspective of a person
standing on the coast), and a trail created by the footprints of people coming and going.

Path is a road:

(134) te kos-m won pɔn
1SG road-CASE upriver.away go(SG.SUB).1SG
I walk upriver along the road

Path is a trail of footprints:

(135) ai eBsI fuku ina napue-ta-sa eru-m pɔn-e
2SG leg place go(NSG.SUB) come(NSG.SUB)-
HAB-3PL DEM.DIST-
CASE IMP
you follow the footprints of everyone coming and going

Path is the horizon:

(136) maBkoku medi-m kou yai-puen-wo
horizon INTENS-CASE downriver.toward be.at.DIST.AN-come(SG.SUB).3SG-3SG
[the boat] is travelling downriver and towards far away on the horizon

4.4.3 Medium

There is only one example of a motion clause containing an argument expressing medium of
motion in the corpus.
(137) mwe-m neti ina-r
    ocean-CASE float go(NSG.SUB)-1PL
    *We went by raft on the ocean*

However one could argue that one particular medium of motion, water, is transparently lexicalised in the verb for swim. *fin* 'swim' bears a close relationship in phonological form to the word for 'water', *fi*. As this verb was elicited as a lexical item, rather than in a wider context, it is currently unknown whether the verbal root conflates the fact of motion together with the medium, water, in its semantics.

### 4.4.4 Source

Momu is unable to express source locations as arguments of motion verbs. This is probably due to the fact that source locations are generally far less salient in the conceptualisation of a motion event than goal or path locations. The source location can generally be inferred from the location of the referent in the prior discourse or from other contextual cues (Foley 1999: 17). When pressed to express ideas containing source locations in Momu, informants resorted to giving two separate clauses, of the nature 'earlier I was at/went to place A, now I am at/have come to place B'. This is demonstrated in the following example.

(138) yoB eru Mafoka-m po ai,
    day DEM.DIST Mafoka-CASE go(SG.SUB) stay.1SG,
    finiB yeB puen
evening then come(SG.SUB).1SG
    *During the day I went and stayed at Mafoka, in the evening I came back.*

### 4.4.5 Via Points

Even more so than source locations, via points are generally not conceptually salient in a motion event. Hence Momu requires that via points be expressed in a separate clause, independently of the motion event. The notion of passing by a particular entity is lexicalised in the verb *tapku/natapku*. 
4.5 Instrument

Momu uses the clitic -B to mark instruments. There are several examples in the corpus of -B marking the instrument of motion when it is a body part. This is shown in the following examples where instrument of motion is the knees (example 140) and the front part of the body (example 141).

(140) te okono-B yai-pən-ya
1SG knee-INST be.at.DIST.AN-go(SG.SUB).1SG-1SG
I am crawling

(141) te fuko ma-B kirini-mu
1SG breast surface-INST slide(SG.SUB).1SG-ASP
I slide along on my front

There are several examples in the corpus of non-body part instruments, however these are understood as locations in/on which the travelling is done, rather than as instruments of travel. This is shown in example (142) by the use of the case clitic -m to mark the boat as a location, and in example (143) by the use of the postposition ni'd to signal the tray of the ute as the location on which the travelling is done:

(142) bot-m fi-m natin na-pə-t
boat-CASE water-CASE float TRANS(SG.OBJ)-go(SG.SUB).1PL
we floated her in a boat on the water

(143) te car ni'd pə-mu
1SG car on go(SG.SUB).1SG-ASP
I'm riding on (in the tray) of the ute
4.6 Speed

Speed is expressed by the words imas 'fast' and sam'di 'slow' which precede the verb. It is unclear at this point whether these words are verbs or belong to another word class such as adverbs. There are no examples in the corpus where they occur with verbal inflections, however they frequently precede the deictic motion verbs pən and puen and hence could be reduced verbs in serial constructions.

(144) te sam'di ya-pən-ya
1SG slow be.at.DIST.AN-go(SG.SUB).1SG-1SG
I'm going slowly

(145) te imas piene pə-mu
1SG fast run go(SG.SUB).1SG-ASP
I run fast

4.7 Other Verbs associated with motion

The verbs penu 'arrive' and fano 'leave' can be used to express the beginning and end points of the motion event in contexts where these notions are conceptually salient. However in discourse they always precede or follow a clause expressing motion, and therefore most probably don't indicate motion inherently. This is shown in the following examples

(146) yeB puen, nəsnak-m peni
then come(SG.SUB).1SG Nesnak.River-CASE arrive(SG.SUB).1SG
Then I arrived at the Nesnak River

(147) te wa-fano,  pən
1SG 2SG.OBJ-leave.1SG go(SG.SUB).1SG
I left you

4.8 Lexical packaging in motion verbs

Finally we must consider the lexical packaging within the predicated motion event. After reviewing a broad cross-linguistic sample, Talmy (1985) made the observation that languages have a tendency to conflate particular elements of the motion event together with the bare fact of motion in a verbal root. Hence there are verbs that conflate manner and motion, such as 'skip', trajectory and motion, such as 'enter', figure and motion 'rain', medium and motion
'swim', instrument and motion 'drive', speed and motion 'hurry', and so on. He went on to notice that the overwhelming majority of verbal roots tended to conflate either manner and motion or trajectory and motion together in a verbal root, but not both together. Hence one would expect verbs such as 'skip' (manner conflating) and 'enter' (trajectory conflating), but there should not be a verb meaning 'to enter skipping'. Motion events that conflate manner and motion in the verbal predicate express trajectory notions in peripheral constituents which Talmy termed 'satellites', such as the English particles in 'skip in', 'skip out', and 'skip around'. Trajectory and motion conflating verbs express manner notions in satellites such as gerunds, as in the English example to 'enter skipping'.

Talmy went further to propose a typology of motion verbs, claiming that any language will have a 'characteristic mode of expression', having predominately manner-conflating or trajectory-conflating verbal roots. Examples of trajectory-conflating languages are those in the Romance, Semitic and Polynesian families. Examples of manner-conflating languages are Chinese and all the languages within the Germanic family. According to Talmy, English is a prototypical manner-conflating language, with an enormous inventory of verbal roots conflating manner, for example 'walk', 'run', 'slide', 'hobble', 'crawl', and 'limp' to name a few. In comparison it has only a very small number of trajectory-conflating verbs, for example 'enter', 'exit', 'pass', 'rise', 'cross', all of which are borrowings from the Romance family.

Levinson (2006) pointed out that Talmy's typology does not hold up when applied to a broader cross-linguistic sample. Problems arise with languages that cannot be clearly assigned one way or the other. Kilivila is such a language, as it has a large inventory of both trajectory and manner verbs which serialise to create complex verbs encoding both notions (Senft 2006). It is not clear how to define Momu with respect to Talmy's typology either. The most general and common means to express motion, the verbs pron/ina and puen/napuen, conflate only deictic anchoring (which is a separate notion from trajectory) together with the bare fact of motion. Thus Momu's characteristic mode of expression is neither trajectory nor manner-conflating. However if we consider entire verbal complexes which express the notion of manner or trajectory as reduced verbs in serialised constructions with pron/ina and puen/napuen, then manner conflations and trajectory conflations are both frequent modes of expression. As such Momu evades easy classification by Talmy's typology.
CHAPTER 5  SPATIAL QUESTIONS

A description of the spatial system of the language would be incomplete without looking at the resources available for asking questions. Questions to elicit static locative descriptions have the following form:

<table>
<thead>
<tr>
<th>Figure + Question word + Case or Directional clitic + Locative verb or Motion verb in question form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Figure 12 - Schematisation of spatial questions</strong></td>
</tr>
</tbody>
</table>

Question words functioning as ground have one of two stems, *Boko* and *mena*. Any semantic distinctions the two words might express are at this stage unclear, as they were often elicited in otherwise identical examples. Both words are always marked with either the case clitic -m, indicating the place at which something is located, or the directional clitic -ti, indicating the direction in which something is located. The following question and answer pairs show these differences. In example (148) the speaker is asking for the direction of the thunder and hence the question word *mena* is marked with the directional clitic -ti. The directional specification is reflected in the answer, in which the directional anchor, the mouth of the river, is also marked with -ti. In example (149), the use of -m in the question indicates that the speaker is asking for the actual location of the garden, rather than the direction in which it can be found. The answer 'the bush' is correspondingly marked with -m.

(148)  Q:  oko mon u mena-ti nanutu  
       cloud speech POSS where-DIR thunder.3SG  
       *In what direction is the thunder?*  

       A:  wok mosu-ti nanutu  
           downriver.away mouth.of.river-DIR thunder.3SG  
           *It's thundering downriver towards the mouth of the river*
(149) Q: mwieke aBu Boko-m u-ta?
garden 2SG.POSS where-CASE be.at.INAN.3SG-QUES.3SG
Where is your garden?

A: oku-m youwo
bush-CASE be.at.DIST.INAN.3SG
It's in the bush

However as was discussed earlier in relation to static location, there is some overlap between
the use of -m and -ti. This is shown by the following questions, which my informants deemed
to be identical in meaning

(150) Q: ai Boko/mena-m af-ta-f-a?
2SG where/where-CASE be.at.AN.2SG-QUES-2SG-QUES
Where are you?

(151) Q: ai Boko/mena-ti af-ta-f-a?
2SG where/where-DIR be.at.AN.2SG-QUES-2SG-QUES
Where are you?

The responses reflected this choice:

(152) A: te anu-m naiya
1SG DEM.PROX-CASE be.at.PROX.AN.1SG
I'm in this direction/I'm here

(153) A: te anu-ti naiya
1SG DEM.PROX-DIR be.at.PROX.AN.1SG
I'm in this direction/I'm here

There are only two verbs used for questioning location, ai and uta. These verbs were
discussed earlier in relation to their declarative usage in section 2.2.3.1 on page 42 and
section 2.2.3.2 on page 43. ai is used to discern the location of animate entities, and uta is
used to discern the location of inanimate entities. The general locative verb naiwo/yaiwo is
never used to discern the location of entities. When used for questions, ai forms a verbal
complex with ta, with both verbs inflected for subject. However the function or meaning
provided by ta is not understood. It appears that uta is morphologically complex in the same
way, however when used in declarative clauses it also contains the ta verb. The addition of ta
is not the usual pattern of question formation as yes/no questions are signalled by the verbal
suffix -fa, and other questions by either intonation or the verbal suffix -a. The following
examples show questions asking for the location of an inanimate entity (example 154) and an animate entity (example 155).

(154) man mena-m uta?
string.bag where-CASE be.at.INAN.3SG-QUES.3SG
Where's the string bag?

(155) Tom mena-m ai-ta?
Tom where-CASE be.at.AN.3SG-QUES.3SG
Where's Tom?

To ask for the location where an action is being performed or the goal of motion, the locative verb is replaced by the action or motion verb. This is shown in the following examples.

(156) Fiona, ai Boko-m pa-f-a?
Fiona 2SG where-CASE go(SG.SUB)-2SG-QUES
Fiona, where are you going?

(157) oko mon u mena-ti nanutu?
cloud speech POSS where-DIR thunder.3SG
In what direction is the thunder?
CHAPTER 6 DEIXIS

Deixis concerns the relativisation of properties in the extra-linguistic context to properties of the speech event. Spatial deixis is the pragmatic specification of location relative to that of the participants in a speech event. By now it will be obvious that deixis is central to the conception of spatial language in Momu, showing up in all major subsections of the spatial domain. In fact, there are very few expressions of spatial reference that do not obligatorily require deictic specification. Any expression of static location involving the basic locative construction requires the obligatory marking of the figure as proximal or distal to the deictic centre. The cardinal directions do not exist independently of the distinction of the direction toward versus away from the deictic centre. Any expression of basic motion forces the choice of a verb indicating movement towards or away from the deictic centre. Even one of the systems of aspectual marking, the progressive, cannot be formed independently of deciding whether the action is taking place proximally or distally to the deictic centre.

6.1 Demonstratives

Anderson and Keenan (1985: 279-280) claim that for any particular language the variety of forms with spatial deictic reference can be considerable, however the deictic notions displayed are generally not different in type from those from those that show up in that language's demonstrative system. Momu supports this theory, as the deictic distinctions inherent in the Momu demonstrative system mirror the distinctions that have already shown up in the other areas of grammar.

Momu has a two-term distance-oriented system, contrasting referents that are proximal with those that are distal to the deictic centre of the utterance. The deictic centre is usually the location of the speaker in an utterance to which the deictic expression is anchored.

Momu has two demonstrative terms anu and eru, marking distinctions of proximal to the deictic centre versus distal to the deictic centre respectively. These can function as demonstrative pronouns, determiners, locationals or temporals. The following examples demonstrate these usages.
Demonstrative Pronouns:

(158)  anu  mori  Baso,  eru  sumui  Baso  
       DEM.PROX  Mori  child  DEM.DIST  Sumo  child  
       this is a Mori child, that is a Sumo child

(159)  anu  Bieku-wa  
       DEM.PROX  what-QUES  
       What's this?

(160)  eru  Bieku-wa  
       DEM.DIST  what-QUES  
       What's that?

Demonstrative Determiners:

(161)  kaf  anu  fiki  nouwo  
       cup  DEM.PROX  close  be.at.PROX.INAN.3SG  
       This cup is close

(162)  mu  eru  Baso  nu  fiki  me=di  nari-mu  
       woman  DEM.DIST  child  ASP  near  INTENS  give.birth(SG.OBJ).3SG-ASP  
       That woman is about to give birth

Demonstrative Locationals:

When demonstratives appear with the case clitic -m or directional clitic -ti they can mark location analogous to that marked by the English demonstrative locationals 'here' and 'there'.

(163)  te  an-ti  naiya  
       1SG  DEM.PROX-DIR  be.at.PROX.AN.1SG  
       I'm here

(164)  te  anu-m  naiya  
       1SG  DEM.PROX-CASE  be.at.PROX.AN.1SG  
       I'm here

(165)  masis  eru  fiki  me=di  eru-m  Bu-f-mu  
       matches  DEM.DIST  close  INTENS  DEM.DIST-CASE  put(NSG.OBJ)-2SG-ASP  
       You put those matches very close to there

(166)  fuku  anou-we  eru  eru-ti  youwo  
       place  big-EMP  DEM.DIST  DEM.DIST-DIR  be.at.DIST.INAN.3SG  
       That big bed is over there.
Demonstrative Temporals:
When they occur with the temporal clitic -B, anu and eru can serve as temporal demonstratives translating as 'now', or proximal to time of utterance and 'then', or distal to time of utterance.

(167) a-narin Vanimo, anu-B mori-m naiwo
1SG.OBJ- Vanimo DEM.PROX- Mori-CASE be.at.PROX.AN.3SG
give.birth(SG.OBJ).1SG TEMP
*My mother gave birth to me in Vanimo, now she is in Mori*

(168) eru-aB as-m kana-ta-sa
DEM.DIST-TEMP sago-CASE cook-HAB-3PL
*Then they would all make sago*

6.2 Deixis from an entire clause perspective

Often deixis of proximity or motion is marked redundantly on more than one element in the clause. In the following example the fact that the figure, the bed, is distal to the deictic centre is shown by three different elements: the distal demonstrative eru occurring as a demonstrative determiner in the figure noun phrase, a demonstrative locational anchoring the directional suffix -ti, and the distal form of the basic locative verb.

(169) fuku anou-we eru eru-ti youwo
bed big-EMP DEM.DIST DEM.DIST-DIR be.at.DIST.INAN.3SG
*That big bed is over there.*

In the following example the fact that the figure is proximal to the deictic centre is shown in both the demonstrative locational anu and the proximal form of the basic locative verb nouwo. Proximity without deictic specification is further illustrated in the proximal spatial nominal fiki.

(170) kaf anu fiki nouwo
cup DEM.PROX near be.at.PROX.INAN.3SG
*This cup is near*

When one of the cardinals is specified as the direction of motion, the deictic distinction of motion towards or away from centre is marked twice, firstly in the cardinal direction and
secondly in the motion verb. This is shown for motion away from the deictic centre in example (171), and motion toward the deictic centre in example (172).

(171) te Mafoka-m wok pən
   1SG Mafoka-CASE downriver.away go(SG.SUB).1SG
I went to Mafoka

(172) te Mafokam pən nua puen
   1SG Mafoka-CASE go(SG.SUB).1SG upriver.toward come(SG.SUB).1SG
I went to Mafoka and came back
CHAPTER 7 CONCLUSION

This thesis has made a preliminary investigation into the linguistic representation of the Momu spatial system. It has provided a description of the primary resources Momu uses to talk about static location and motion. Chapter 2 explored the individual elements of the basic locative construction, the most common structure Momu employs to talk about topological and toponymic relations. It then looked at the types of situations Momu considers to be non-basic, such as when the figure is human or in an unusual position, which each require that the BLC is altered or elaborated upon. Chapter 3 examined the two frames of reference Momu uses for directional specification: the intrinsic and the absolute. Chapter 4 investigated how Momu expresses each of the conceptual elements of a motion event. Finally it was noted that Momu pays particular attention to the specification of deixis in each of the sub-areas of the spatial domain, and that the types of distinctions made are mirrored by those that show up in the demonstrative system.

This analysis of spatial reference rests on a preliminary analysis of Momu grammar. Much more needs to be understood about the grammar of Momu before a deeper investigation into spatial language can proceed. Beyond this, the next stage is to further investigate and elaborate upon the areas of the spatial domain that have already been explored in this thesis. Aspects yet to be investigated include shape and dimension. This thesis has shown that the progressive aspect in Momu is formed from the basic locative verb, but other such grammatical extensions require further investigation. It also touched briefly on how demonstratives can be used in a temporal sense, but the full interaction between the spatial and temporal systems demands much more work. Spatial language is often extended metaphorically into other domains, for example kinship and emotions, as well forming a template for other areas of the grammar such as aspect and causal relations. A thorough description of the linguistic representation of space must include all such extensions, both metaphorical and grammatical.

A full investigation of the Momu spatial system would not be complete without exploring the non-linguistic aspects of the spatial domain. Anthropological issues such as the relationship
between the environment, religion and the cosmos, and spatial behaviour such as gesture, pointing and posture all interact with spatial language in complex ways. The types of distinctions made in spatial language also have enormous ramifications for other aspects of cognition such as orientation, memory and navigation. With a thorough investigation into both spatial language and the non-linguistic conception of space, we will gain a more complete understanding of spatial cognition for Momu speakers. Thus we will be able to contribute the growing body of knowledge about human spatial language and cognition.
REFERENCES


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