Landscape in East Timor Papuan

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A R T I C L E   I N F O

A B S T R A C T

This article investigates the nominal vocabulary labeling features of the landscape in Makalero, a Papuan language of East Timor. Makalero landscape terms are shown to behave grammatically like place names rather than like common nouns, thus reflecting the ontological distinction between places and objects as discussed in linguistic semantics. It is argued that cultural parameters underlie the morphological division between mono-morphemic and derived terms, the metaphorical use of terms from the body and human domain in a subset of landscape terms, as well as place naming. Makalero is situated in a comparative perspective, including both genetically related and unrelated languages of the wider Pacific area. On this basis, I postulate a tentative "Papuan" type of landscape categorization, which contrasts with an Austronesian type.

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1. Introduction: language and landscape

Landscape is a domain of central importance to everyday life in most human communities. This is certainly true for the Makalero of East Timor, whose Papuan language is the focus of this study. Animist traditions, in which landscape and places are imbued with considerable potency, remain an important part of Makalero cultural life, despite the fact that the majority of Makalero speakers are catholic. Springs, rivers, and especially mountains are considered sacred and are associated with potent spirits. Landscape is also intimately connected to the organization of Makalero society; all Makalero clans have their own sacred sites, associated with their ancestors. The phrase *mu'a ki-ouar* 'lord, owner of the land' is used both for the spirit of a place as well as for aristocratic members of the clan associated with it (cf. also Hicks, 1976), and there is an overlap between place names and clan names, with some of them referring both to features of the landscape as well as to clan groups.

The study of landscape in language and its cross-linguistic comparison (for which the term ethnophysiography was coined by Mark and Turk, 2003) has come to the attention of linguists relatively recently and has since been discussed in terms of both basic linguistic description and theory (e.g. Burenhult, 2008; O'Meara, 2010) as well as Natural Semantic Meta-language (e.g. Bromhead, 2011). An interdisciplinary approach is used in Mark et al. (2011). All of these studies suggest that landscape categorization, as evidenced, for instance, by the denotational properties of landscape terms, differ considerably across languages. Given the high spiritual and social importance of landscape in Makalero culture as outlined above, the study of this domain in Makalero adds interesting insights to the current state of knowledge in landscape categorization. The inventory of basic landscape terms seems largely based on utilitarian principles; it is argued that, next to this, subgroups defined by derivational morphology and the metaphorical extension of terms from the body part and human domain indeed reflect cultural preoccupations. Grammatically, Makalero landscape terms form a covert category together with toponyms in

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that they can be interpreted as locative if used predicatively; this characteristic sets place names and landscape terms apart from all other nouns and seems to reflect the distinction between a 'what' category and a 'where' category as discussed in Lyons (1977) and Landau and Jackendoff (1993); see also Smith and Mark (1998). Finally, the comparison of the Makalero data with related languages, both nearby and further afield, reveals some interesting similarities; on this basis, a tentative "Papuan" type of landscape conceptualization, which seems to reflect an essentially land-oriented culture, is proposed. This contrasts with the sea-orientedness typically associated with Austronesian languages.

This study is organized as follows: Sections 2 and 3 provide background information about the Makalero language, its speakers and their geophysical environment, as well as the data upon which this study is based, their collection, and the orthographical conventions used. Section 4 presents the inventory of landscape terms in Makalero and discusses their semantic and structural properties. Together with place names, these landscape terms constitute a semantically-based class with distinctive grammatical properties, which are discussed in Section 5. Section 6 focuses on subgroups of landscape terms defined by their morphological makeup and the use of metaphor, arguing that, together with patterns in toponymy, this reflects the spiritual importance attributed to landscape in Makalero culture. Section 7 situates Makalero in a comparative perspective, contrasting systems of landscape categorization in Papuan languages with Austronesian ones. Finally, the concluding section summarizes insights into Makalero grammar that have come to light through this investigation into landscape, and shows how the language's system of landscape categorization relates to the results from earlier studies, stressing in particular the importance of spiritual associations vis-à-vis day-to-day affordances.

2. East Timor: languages and geography

Timor is the largest and easternmost of the Lesser Sunda Islands. Numerous islands, belonging to the Indonesian Nusa Tenggara Timur and the Maluku provinces, are visible from the North coast, while the South borders the open Timor sea. The independent state of East Timor occupies the eastern half of the island as well as the exclave Oecussi on the Indonesian western half. It has an overall area of 14,954.44 km^2, and its 783 km coastline is surrounded by coral bases. Its interior is characterized by rugged highlands, with elevations of up to almost 3000 m on Mt. Ramelau near the border to Indonesian Timor. A number of rivers, draining either into the Banda sea to the north or the Timor sea to the south, have their source in the central mountains. Many of these are aquiferous only during the wet season. Towards the eastern tip, the inland of the island is dominated by the extensive Fuiloro plateau.

Located just south of the equator at approximately 8° S, East Timor has a tropical climate. The dry season, between May and November, is more pronounced in the northern half of the island. On its southern side, the rainy season may last up to 7 months (approximately December to June), with occasional precipitation even during the dry season. Temperatures are generally high, although at night time during the rainy season, they may at places fall below 20 °C, and considerably lower at higher altitudes.

Linguistically, East Timor displays a high degree of diversity, being home to some 16 languages.[1] Of these, 12 belong to the Austronesian family, while the remaining four are Papuan.[2] Fig. 1 shows the linguistic map of Timor.

Makalero, the smallest of the Papuan languages of Timor, is shown in black in Fig. 1. It is spoken in Iliomar, a subdistrict within East Timor's easternmost Lautém district, by about 7200 people (according to the 2010 population census of the Direcção Nacional de Estatistica[3]). The subdistrict covers an area of approximately 300 km^2, occupying about 30 km of the south coast and extending some 10 km into the center of island. It is mostly covered with tropical dry forest and moist deciduous forest, with agricultural land scattered through the forested areas. The area is mountainous, with elevations ranging from sea level to almost 900 m on Mount Naunil. Several rivers cross the Makalero territory, running southwards into the Timor sea. The Iliomar subdistrict is naturally bordered in the south by the sea, in the west and north-west by the valley of the Irabere river, one of the major rivers running towards the southern coast of the island, and in the east by the Namaluto river.[4] These clear natural borders roughly correspond to clear linguistic boundaries: Makalero borders the Austronesian language Naueti in the west and north-west, and the Papuan language Fataluku in the east and north-east. In the mountainous center of the island, to the north of Iliomar, Makalero gradually changes into its closest relative Makasae (also spelled Makasai, Makassai or Macassai).
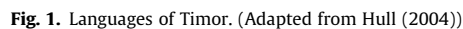
Some 4000 of the Iliomar subdistrict's population live in and around the town of the same name. The rest of the population is scattered in small settlements around the subdistrict. Most inhabitants of the subdistrict are subsistence farmers. The main crops cultivated are rice, maize and vegetables. Furthermore, there are fairly extensive coconut plantations. Other crops cultivated are candlenut (*Aleurites moluccana*), areca (*Areca catechu*) and lontar palms (*Borassus sundaicus*). Livestock includes water buffalo, cattle, pigs, goats, chickens and horses. Despite the subdistrict's long coast line, little fishing is undertaken due to rough seas.

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[1] The exact figure differs, depending on the source (see e.g. Lewis et al., 2013; Almeida, 1994). The number of 16 languages follows the count of the National Institute of Linguistics (INL) of the University of East Timor.

[2] While they are clearly related, th exact affiliation, both at a low and at a high level, is still a matter of some dispute (see Schapper et al., 2012).

[3] Online at: http://www.dne.mof.gov.tl/published/2010%20and%202011%20Publications/Pub%202%20English%20web/Publication%202%20FINAL%20%20English%20Fina_Website.pdf.

[4] See Section 4.2 for Makalero river names; the names used here are the official names used on maps.

Fig. 1. Languages of Timor. (Adapted from Hull (2004))

3. Data and orthography

This study relies mainly on two kinds of data, which were collected by the author during a field trip in early 2012. The first type consists of semi-structured interviews with individual speakers in which consultants were asked to explain the meaning of a variety of relevant terms in their own words. The list comprised some 40 nouns derived from data collected during earlier field trips as well as a monolingual Makalero dictionary of 106 pages compiled by a native speaker (Pinto, 2004). It included terms referring to landscape features, settlements, religious sites, substances and relational nouns. The second type of data is made up of several runs of a landscape-themed director–matcher task, an elicitation technique developed by the Language and Cognition group of the Max Planck Institute. This type of task requires two participants, each of whom is given an identical set of photographs. The director participant then selects a picture, while the matcher participant has to identify this picture from his set, based on the director's verbal description. This results in spontaneous conversations about the categories in which the researcher is interested. I used two different sets of landscape photographs for the director–matcher tasks; one set focused on mountaineous inlands, the other on coastal and riverine landscapes. The sets consisted of 37 and 32 photographs, respectively.

Three individual interviews were used for this study; the speakers are between 50 and 80 years old. Two of them are additionally fluent in Tetum and Indonesian and have fairly good competence in Portuguese, while the oldest of them is fluent in Makalero only, but understands Tetum and Indonesian to some degree. Four speakers are involved in the three runs of the director–matcher task used here (one speaker participated in two runs with different sets; the matcher in the third run was largely silent and is thus not counted in the total of speakers). The participants in these tasks are aged between 20 and 30, and are all fluent in Makalero, Tetum and Indonesian, with varying degrees of competence in Portuguese.

These data were supplemented by oral route descriptions and recorded explanations given to me during field walks. I furthermore occasionally make use of utterances that I made note of in unrelated conversations, as well as recordings on a variety of subject matters from earlier field trips.

Similar interviews and director–matcher tasks were conducted with speakers of the related languages Fataluku and Makasae. A preliminary analysis of these is used in the basic comparison in Section 7. For Fataluku, the online dictionary of the Fataluku language project[5] was also consulted. The Bunaq data come from an unpublished vocabulary list collected by Schapper (not dated).

Makalero phonology and the orthography used to represent it are relatively straightforward; the basic principles are laid out in Huber (2011: 32). The spelling used in this article differs only in its use of the graph <w> for the bilabial glide, where

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Huber (2011) used <u>, in accordance with the treatment of this sound as an allophone of /u/. The spelling of Makasae words follows the same principles; for Fataluku and Bunaq, I follow the spelling used by the Fataluku language project and by Schapper (not dated).

4. Landscape terms in Makalero

The simple landscape terms found in Makalero can be divided into three thematic subgroups, viz. land relief, water, and vegetation, based on their association with different hypernyms. *Ha'awein* 'place' subsumes both terms referring to land relief, as in (1), and vegetation cover, as in (2), to the exclusion of water features.[6]

(1) . . . *weir   ho'o=ni   mu'a-dukal-isi   wai=konai   ha'awein   were   ki-nei   lokun.*
         river   some=CTR   land-fall=LNK2   CLS=CSQ   place   2DEM   3:POSS-name   ravine
         '. . . some river falls to the ground, so that place is called a ravine.'

(2) *Alah   ere   ha'awein   taure'=ini   ate   isi-lafu'.*
      forest   1DEM   place   which=LNK1   tree   be.at:RED-live
      'A forest is a place in which trees live.'

Mu'a 'land' appears to function as a hypernym for most land relief terms. Examples are given in (3) and (4); the first is an excerpt from Pinto's (2004) definition of *larin* 'mountain'; the second is from his definition of *lokun* 'ravine'.

(3) *larin: mu'a ki we natini wa asanere*. . .

      Larin: mu'a   ki=we-nat=ini=wa   asan   ere. . .
      mountain   land   ATTR-V2DEM:RED.stand=LNK1=REL   long   1DEM
      'mountain: land which stands there which is high. . .' (Pinto, 2004: 71)

(4) *lokun: mu'a ki wesa'i*. . .

      Lokun: mu'a   ki=we-sai'. . .
      ravine   land   ATTR=V2DEM:RED-end:BD
      'ravine: land which ends there. . .' (Pinto, 2004: 74)

Vegetation cover, however, is understood to be distinct from the actual land, as can be seen from (5).

(5) *Mu'a=wa   (. . .)   lafu'   ere   ki-nei=ni   ere'.*
      land=REL   live   1DEM   3:POSS-name=CTR   1DEM.V
      'The land which (it) lives on, this is (the forest's) name.'

Lastly, *ira* 'water', if understood as a substance term, can be said to subsume most water-related features (see Section 4.2 for details).

The three groups of landscape terms defined by these hypernymic relations are listed in Table 1.[7] This inventory of simple terms contrasts with the complex terms, i.e. compounds or lexicalised noun-modifier phrases, which are introduced in the following subsections. The term 'simple', does not make reference to the internal morphological make-up of the nouns in question; this is discussed later in Section 6.

4.1. Land relief

Table 1 shows a relatively small inventory of simple nominal land relief terms, consisting of *mu'a* 'land', *larin* 'mountain', *pukar* 'hill', *sokor* 'pass, saddle', *pa'an* 'valley', *lokun* 'ravine', *fifir* 'cliff', *toil* 'slope' and *ili* 'rock'. Of these, *larin* 'mountain' and

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[6] Abbreviations used in the examples are 1DEM, speaker-related demonstrative; 1pi, first person plural inclusive; 2DEM, addressee-related demonstrative; 3, third person; ATTR, attributive marker; BD, bound; CLS, clausal pro-form; CMPL, completive; CSQ, consequential; CTR, contrastive; CTR.PRES, counter-presupposition; INT, intention; LNK1, linker 1; LNK2, linker 2; NEG, negation; NSIT, new situation; PL, plural; POSS, possessive; RDL, reduplication; REC, reciprocal; RED, reduced; REFL, reflexive; REL, relative marker; SG, singular; UND, undergoer; V2DEM, addressee-related deictic verb; VDEM.HIGH, higher elevation deictic verb.

[7] Table 1 includes only terms that exclusively refer to landscape features, to the exclusion of relational nouns, such as *pupul* 'summit, top part', which is found often with reference to elevations, but may equally well apply to the crown of a tree, or *walir* 'edge', which may be used to refer to river banks or the beach, but also to the edge of a table. Other terms which are not listed as landscape terms in the narrow sense are *mana* 'hole, cave', which can also be used for the holes of a flute and *kirin* 'old, heirloom, taboo', which may be used to refer to virgin forest as well as to permanent springs, but also any old and prized object. With reference to landscape features, these lexical items are usually used in compounds with the landscape terms in Table 1. Such complex expressions are discussed briefly in Sections 4.1 and 4.2.

Furthermore, Table 1 does not include substance terms, such as *inuk* 'sand', *uar* 'stone, pebble', *li'an umur* 'k.o. rock, stone', *loun* 'k.o. stone', *ra'an* 'gravel pit (?)', *difa* 'clay', *dama-dama* 'coral stone', *pok* 'pebble'. Some exceptions in this respect are *mu'a* 'land', *ili* 'rock' and *ira* 'water', which are used as both to denote particular parts of the landscape as well as substances. Other sets of terms missing from Table 1 refer to human activity: *nu'ak* 'village', *omparu* 'old village site', *wa'arasa* 'sacred place', *lopur* 'altar, place to worship', as well as to specific types of vegetation, such as *lumus* 'grass(land?)' and *munu* 'k.o. grass'. In all of these cases, further research is needed to determine how they relate to landscape terms and whether they can be considered members of that class.

Table 1
Simple landscape terms.

Makalero	English
Land relief	
mu'a	land, earth, soil, country, area
larin	mountain
pukar	hill
sokor	pass, saddle
pa'an	valley
lokun	small valley, ravine
fifir	cliff, site of a landslide
toil	(steep) slope, side of the valley
ili	rock
Water	
ira	water
meti	sea
weir	river
lorin	brook, rivulet
tauh	small pond, wallow
Vegetation	
alah	forest
ama	garden, field
ado	plantation, orchard
dana	abandoned field
lofo	small vegetable plot
keta	dyke between rice paddys (?)

pukar 'hill', *pa'an* 'valley' and *lokun* 'ravine', and *fifir* 'cliff' and *toil* 'slope' group into pairs of near-synonyms. Only one of the members of each pair was commonly used in the director–matcher tasks.

The most general term in this set is *mu'a* 'land, earth, soil, country, area'. It denotes any dry land and contrasts with inland bodies of water or the sea, as shown in (6).[8]

(6) ...*hoo wa ira mutu lafuhu, meti mutu lafuhu, mu'a wua lafuhu*...

    ...   *ho'o=wa*   *ira-mutu-lafu'*   //   *meti-mutu-lafu'*   //   *mu'a-ua-lafu'*
         some=REL   water-be.inside:RED-live   sea-be.inside:RED-live   land-be.on.top:RED.live
    '... some which live in the water, (some which) live in the sea, (and some which) live on land...'
    (Pinto, 2004: 99)

The phrases in (7) show that *mu'a* 'land' can be used on a variety of scales.

(7)   *mu'a Timor*   'Timor island, the state of (East) Timor'
      mu'a Iliomar   'the Iliomar subdistrict'
      mu'a Ma'adarira   'the village of Ma'adarira'

Mu'a 'land' also functions as a hypernym for the other landscape terms (see Section 4 for examples). Pinto (2004) further-more uses it in his definitions of different consistencies of soil, such as *difa* 'clay'. This shows that *mu'a* function as both a landscape term and a substance term.

Mu'a can also be translated as 'climate' or 'weather' in its use as an obligatory and fixed subject to verbs expressing time of day and weather (cf. Huber, 2011: 164), such as *lak* 'late afternoon' and *ruru* 'thunder'.

If reduplicated, *mu'a* 'land' functions as a verb, meaning 'low, flat' (8). This is an unusual pattern in Makalero, where redu-plication as a class-changing process is otherwise found only to derive nominals from verbs (cf. Huber, 2011: 106f.).[9]

(8)   *Lokun*   *were*   *ha'awein*   *ki=mu'a-mu'a*...
     ravine   2DEM   place   ATTR=low
     'A ravine is a low place...'

Convex features are described as either *larin* 'mountain' or *pukar* 'hill'. *Larin* 'mountain' is defined as a feature which rises above the surroundings, as seen in (3) from Pinto (2004). Other definitions additionally stress the fact that mountains stand "separately" i.e. are entities clearly delimited from their surroundings. My consultants tended to treat *larin* and *pukar* as

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[8] // indicates the break between the two parts of the parallel structure; see Section 6.
[9] Note that a presumably homophonous word *mu'a* means 'language'.

synonyms, although upon my insistence, they would add something along the lines of (9). Also, Pinto (2004: 32) defines *pukar* 'hill' in much the same words as *larin* 'mountain' (see (3) above).

(9) ... *nomo   hau   larin-rusun   were   lolo   pukar.*
          NEG   all   mountain-tall   2DEM   say   hill
     '... (something which is) not as tall as a mountain, that we call "hill"'.

It is possible that a somewhat rounder shape is also associated with *pukar*, although further testing is needed to confirm this. In general, *larin* 'mountain' is used much more widely. In fact, in the data on which this study is based, *pukar* 'hill' seems to be used in the vicinity of and to contrast with *larin* only, but never on its own. Some speakers also use phrases like *larin ki=niri-nirik* or *larin ki=ka'u* 'small mountain' instead of *pukar* 'hill'.

All mountains and hills in the Makalero country are named. The focal area of these names appears to be the mountain tip, although they are commonly extended to refer to the whole of the elevation. The name of the Makalero-speaking subdistrict and its main town, Iliomar, is in fact originally the name of the mountain at whose foot Iliomar town lies.

The inventory of concave features is relatively detailed, in comparison with the convex ones. The duality of *larin* 'mountain' and *pukar* 'hill' is paralleled by that of *pa'an* 'valley' and *lokun* 'ravine, small valley', which speakers spontaneously also treated as identical. If asked about the difference between the two, most speakers agree that *lokun* 'ravine' is the result of a water course carving itself into the land, as seen from (10).

(10) *Lokun   ere   ira=ni   keuh-isi'   wai=konai   lokun.*
      ravine   1DEM   water=CTR   rasp:RED-be.at   CLS=CSQ   ravine
      'A ravine, it is water that's rasping, so it becomes a ravine.'

A *pa'an* 'valley', on the other hand, is set between two mountains and is 'just there', according to the same speaker.

(11) ...   *pa'an   ere   houdainisi   ki=we'*   (...)   *larin   loloi   leetana'   were*
                valley   1DEM   habitually   ATTR=V2DEM   mountain   two   in.the.middle   2DEM

      ki-pa'an.
      3:POSS-valley
      '... a valley, that is usually (just) there... between two mountains, that's the valley.'

It is used as a counterpart to both *larin* 'mountain' and *pukar* 'hill'; (12) is an example in which *larin* and *pa'an* are juxtaposed.

(12) ... *taure'   larin   taure'   pa'an=ini...*
           Which   mountain   which   ravine=LNK1
      '... which ones are mountains and which are valleys...'

The term *pa'an* occurs much more widely than *lokun*, even to refer to rather narrow valleys. In fact, *lokun* 'ravine' is not used a single time in the director–matcher games. Valleys are in general mentioned very infrequently, and in most cases only the mountains to either side, or the watercourse at the bottom of it, are referred to, but not the valley per se. Furthermore, while it appears all elevations are individually named, depressions are usually identified by a river or settlement associated with them, rather than by proper names of their own. An example is lokun Wata Manufai 'the Wata Manufai (village) valley'.

A second duality of terms relating to concave features is *fifir* 'cliff, site of a landslide' and *toil* '(steep) slope'. According to the speaker of (10) and (11), these two terms correlate with *lokun* 'ravine' and *pa'an* 'valley', in that *fifir* 'cliff' refers to the side of a *lokun* 'ravine', while *toil* 'slope' pairs with *pa'an* 'valley'. A *toil* 'slope' may be defined as being under, or at the foot of the mountain, as in (13).

(13) *Toil   larin-ia   k-ata'*
      slope   mountain-foot   3:UND-be.in.contact
      'A "toil" is at the foot of a mountain...'

However, the majority of speakers did not use either *fifir* or *toil* with respect to convex features, only with concave ones. Thus, *fifir* and *toil* are sides of valleys and ravines rather than flanks of mountains and hills, for which expressions based on *larin* 'mountain' or *pukar* 'hill' are used (see Table 2).

Like its counterpart *lokun* 'ravine', *fifir* 'cliff' is associated with the geological action of water. It is also defined as the site of a landslide.

Sokor 'pass, cleft' has been found very rarely. It is described rather vaguely as a 'split between two mountains', but its semantics seem to include the gullies formed by small watercourses below such passes (see also Section 6).

Like *mu'a* 'land', *ili* 'rock' is used as both substance and a specific instance. The two uses are shown in (14) and (15). The use of the numeral in (15) makes clear that the speaker is referring to individual rocks.

Table 2
Complex land terms.

Simple term	Complex term	Gloss	Translation
mu'a 'land'	*mu'a tetu'*	land level	plain
	mu'a hopan	land featureless	field, square, clearing
	mu'a namar	land cleared	land cleared (of trees)
	mu'a hare'	land clean	land with no vegetation on it
	mu'a hat (*ki=pere*)	land dry (ATTR=big)	mainland
	mu'a-lek	land-leftover	river island
	mu'a-hi'an	land-shade	cloud (dense cover)
	mu'a-mana	land-hole	cave, hollow in non-rocky ground
larin 'mountain'	*larin-ia*	mountain-foot	foot of mountain
	larin-k-ata'	mountain-3.OBJ-contact	mountain flank
	larin ki-lafi	mountain 3:POSS-side	mountain flank
	larin-pupul	mountain-summit	summit, crest
ili 'rock'	*ili-mana*	rock-hole	cave in a rock face
	ili sakal	rock standing (?)	standing stone

(14) *Larin   ere   ili=hi'a.*
      mountain   1DEM   rock=only
      'This mountain consists of rock only'.

(15) *Ili   ere   lolitu=hi'a.*
      rock   1DEM   three=only
      'There are only three rocks.'

Some individual rock formations are also named.

This inventory of land relief terms, consisting of the nine nouns discussed in the preceding paragraphs, is expanded by means of modification (spelled in two words) or nominal compounding (hyphenated). Expressions like these refer to parts or types of the features in question. Table 2 gives an overview of such complex terms. All of these are conventionalized in that they are found in the speech of several individuals independently. The modifiers in the post-nominal MOD slot are verbal elements of which part are more general in meaning, such as *hare'* 'clean' and *hat* 'dry', and part are found describing properties of the landscape only, such as *tetu'* 'level', *hopan* 'featureless', and *namar* 'cleared'. None of the nouns used in compounds seems to be dedicated to the description of landscape; instead, they are all more general in meaning.

Not surprisingly, most of the expressions listed in Table 2 are based on *mu'a* 'land', the most general of the land relief terms. *Mu'a tetu'* is used to refer to a plain or level land. It is not usually associated with forest cover, though some trees may be growing on it. *Mu'a hopan* may replace *mu'a tetu'* in certain contexts. However, (16), in which *hopan* is used to describe a mountain, shows that flatness is not an essential component of this verb's semantics; instead, it refers to any treeless area. *Mu'a hopan* is used in a director–matcher task in order to express a contrast between forested and unforested land.

(16) ... *larin=ee   hopan.*
          mountain=DEF   featureless
      '... the mountain is not forested.'

Section 4.2 shows that the verb *hopan* can also be used as a modifier to *meti* 'sea'. As such, the most accurate translation of the term is perhaps 'featureless'. A similar concept is expressed by *mu'a hare'* 'clean land', used to describe bare earth with no vegetation cover at all. *Mu'a namar* appears to refer to a piece of land that has been purposefully cleared of forest cover and may be farmed. One speaker gave *mu'a namar* 'cleared land' as the opposite of *alah* 'forest' (see Section 4.3).

Mana 'hole', as in *mu'a-mana* or *ili-mana*, can be compounded with all substance terms expressing types of soil or surfaces. As such, all expressions that translate as 'cave' necessarily include information about the cave's geological make-up.

Among the terms shown in Table 2, *mu'a-hi'an* is semantically somewhat out of line in that it does not refer to physical features of the land, but to dense cloud cover that shields the land. The term contrasts with *nun-teur*, which refers to small scattered clouds. It is listed here because it is formed on the base *mu'a* 'land'.[10]

Terms formed on the base of *larin* 'mountain' refer to parts of mountains, rather than types of mountains. Notably, transparent combinations such as *larin-k-ata'* and *larin ki-lafi* are used to express 'mountain flank/side'. These are needed because *fifir* 'cliff' and *toil* 'slope' are commonly used in connection with concave features rather than with convex ones (see above).

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[10] Note that Cablitz (2008) includes celestial features in her discussion of landscape in the Marquesan language. Whether such terms make part of the class of landscape terms in Makalero remains to be investigated.

Pupul, used in *larin-pupul*, is a relational noun referring to the upper part, or crown, of an object with vertical extension, such as a mountain or a tree.

Notably, there is in Makalero no word corresponding directly to the English 'island' (or Indonesian *pulau* 'island'), apart from the term *mu'a-lek* 'river island', a compound of *mu'a* 'land' and *lek* 'leftover (i.e. of food)'. The island of Timor is usually referred to simply as *mu'a Timor* 'the land of Timor', or as *mu'a hat* 'mainland' (lit. dry land). Speakers ascribed the lack of a lexical equivalent to 'island' to the absence of islands in the sea along their coast (but see Section 7).

The expressions as listed in Table 2 are all nominal in category. However, the content words involved may also be used in different constructions to convey the same meaning.[11] What is listed in the table as a noun with a verbal modifier (e.g. *mu'a tetu'* 'plain', *mu'a hopan* 'featureless (unforested) land') may be expressed as a full clause, with the nominal part functioning as a subject and the verbal part as the predicate, as seen in (16) above. The definite marker *=ee* marks the right edge of the NP, showing that *hopan* 'featureless' functions as the clause's predicate. It is also possible to use the modifier without the head noun, functioning as an NP on its own, as in (17).

(17) *Ate   mata-mata-r=ini   hopan=ee   k-ali-naser   la'a.*
       tree   RDL-child-PL=CTR   featureless=DEF   3:UND-around-stand:PL   move
       '. . . small trees are scattered on the treeless area.'

Alternatively, within an NP, the modifier may use an overt attributive marker, such as *ki=* in (18).

(18) *tetu'u: mu'a kitetu wa munu hi'a ini mutu lafuhere*

       Tetu':   mu'a   ki=tetu'=wa   munu=hi'a=ni   mutu-lafu'   ere
       flat   land   ATTR=flat=REFL   k.o.grass=only=CTR   be.inside:RED-live 1DEM
       'flat: flat land is where only grass grows' (Pinto, 2004: 101)

Expressions listed as hyphenated nominal compounds in Table 2 may also be paraphrased as possessive constructions, as shown in (19) and (20). The possessive construction usually serves to individuate a specific feature, while the nominal compound does not refer to a particular instance.[12]

(19) *Toil   larin-ia   k-ata'*
       slope   mountain-foot   3:UND-be.in.contact
       'A 'toil' is at the foot of a mountain. . .'

(20) *Larin   ere   ki-ia   k-ata'   ere   lumus=hi'a.*
       mountain   1DEM   3:POSS-foot   3:UND-be.in.contact   1DEM   k.o.grass=only
       'At the foot of the mountain, there is grass only.'

(21) gives a variety of expressions based on a land relief term similar to those in Table 2. However, these are found in the speech of only one speaker each and gave the impression of being fairly ad hoc.

(21) *mu'a*   *ki=se-nat*   'island (in the sea)'
       land   ATTR=alone:RED-stand

       larin   *meti-mutu-soru'*   'peninsula'
       mountain   sea-be.inside:RED-meet (?)

       pa'an   *ki-k-ata'*   'side of a valley'
       valley   3:POSS-3:UND-be.in.contact

       pa'an   *ki-k-ata-la'a*   'side of a valley'
       valley   3:POSS-3:UND-be.in.contact:RED-move

4.2. Water

Table 1 lists the following nouns to refer to water-related landscape features: *ira* 'water', *weir* 'river', *lorin* 'rivulet', *tauh* 'pond, wallow', and *meti* 'sea'. The main contrast in this domain is between sweet water, for which the term *ira* is used, and *meti* 'sea, salt water'. It is noticeable that, while there is some lexical elaboration of different sweet water features, there is practically none in the domain of seascape. As with the land relief-related terms discussed in Section 4.1, this relatively small inventory is expanded through modification or compounding.

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[11] The same is true for the complex terms denoting water features listed in Table 3.
[12] Note that Table 2 lists one instance of a possessive construction, namely *larin ki-lafi* 'mountain side, flank'. In this case, there is no occurrence in the corpus of a nominal compound of the form *larin-lafi*. This is most likely a coincidence rather than a meaningful pattern.

Ira 'water' is in several respects a counterpart to *mu'a* 'land': like *mu'a* 'land', *ira* 'water' is used as both a substance term and a landscape term (see Section 4.1). It is, for instance, used as a substance in the compound *meti-ira* 'sea water'. In this sense, the other sweet water features can be described as types of, or containing, *ira* 'water'. As a landscape term, however, *ira* is defined as being stagnant and fresh or sweet and cannot be understood to function as a hypernym to any other of the simple water feature terms.

Flowing water is understood to be distinct from *ira* 'water'; *weir* 'river' and *lorin* 'rivulet' are used for moving bodies of water. *Weir* 'river' denotes a larger watercourse, while *lorin* 'rivulet' is described as *weir ki=ka'u* 'a small river'. The term *weir* 'river' is much more common in everyday language than *lorin* 'rivulet'. Water courses denoted by either term are not necessarily permanently aquiferous, but may go dry during the dry season. In fact, in the Iliomar area, there are only two rivers, called Irabere and Namalutun, which are permanently aquiferous and run southwards from the central mountains into the Timor sea.

Meti 'sea' contrasts with *ira* '(sweet) water', as shown in (22), which is taken from Pinto's (2004) definition of *afi* 'fish'.

(22) *suan kilafuhu unini ira mutu lafuhu, meti mutu lafuhu.*

    Suan   *ki=lafu'*   *un=ini*   *ira-mutu-lafu'*   // *meti-mutu-lafu'.*
    animal ATTR=live one=CTR water-be.inside:RED-live   sea-be.inside:RED-live
    'a (living) animal (that) lives in the water and in the sea.' (Pinto, 2004: 7)

Finally, *tauh* refers to a relatively small pond or waterhole in which animals, especially water buffaloes, wallow.

Again, it is possible to significantly expand on this basic inventory of water feature terms using modification and compounding. A list of conventionalized complex terms (in the sense that they are found as such in the speech of several speakers) is shown in Table 3.

Ira 'water' can be modified to denote a variety of water bodies, most of which are understood to be stagnant; thus, *ira-ina* 'spring' denotes only the pool formed by a spring. Any water gushing out from there would be referred to as either *weir* 'river' or *lorin* 'rivulet'. Two types of springs are commonly distinguished using a verbal and a nominal modifier, respectively: *ira kirin* 'permanent spring' and *ira mata su'ul* 'transient seasonal spring'. Springs called *ira kirin* produce water all year round. The term *kirin* appears to mean 'old, valuable' and also 'taboo', and may also be applied to something like a family heirloom. In the landscape domain, it is also found as a modifier of *alah* 'forest' (see Section 4.3). A spring referred to as *ira mata su'ul* holds water only during the rainy season, but dries out during the hot season.

Ira liu 'pond' is probably the most widely used of the expression based on *ira* 'water'. While there are no lakes of any size in the Iliomar area, it is used to refer to ponds and other inland bodies of standing water, as in (23), where it describes the water used to flood a wet rice field. Note that *liu* is used here as a predicate, not a modifier within the noun phrase.

(23) ... *ira=hi'a*   *we-liu.*
        water=only V2DEM:RED-stagnant
    '... a lot of water is lying in there.'

Ira liu 'pond' contrasts with *ira-ha'a* 'coastal lagoon'. Lagoons in the Iliomar area are generally cut off from the sea and contain sweet water. In terms of size, an *ira-ha'a* 'lagoon' is understood to be bigger than an *ira liu* 'pond'; both are, in turn, larger than *tauh* 'wallow'.

Ira-keta 'rice paddy' is made up of the two constituent parts of a flooded rice paddy, namely water (*ira*) and the dyke between paddy fields (*keta*; see Section 4.3). *Ira* is also used on its own, without *keta*, to refer to a paddy field; an example is the frequent collocation *ira pure* 'farm (a rice paddy)'. (24) illustrates the use of *ira* 'water' in the sense of rice paddy in a sentence that is not a set expression. When I used this sentence with the intention to say that someone had gone to the communal standpost, I was told that people would interpret *ira* in this sentence as 'rice paddy' rather than 'water'.[13]

(24) ... *ira-isi-la'a.*
        water-be.at:RED-move
    '... (she) has gone to the rice paddy.'

There are some exceptions to the rule that all terms based on *ira* 'water' are stagnant. These are *ira mu'a-dukal* 'waterfall', where it appears *ira* is understood as a substance term rather than as a landscape feature, and *ira-tana* and *ira-mana*. Both of

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[13] The intended meaning would have to be expressed as either (i) or (ii), depending on the context.

(i) ... *la'a=ni*   *ira*   *k-otu.*
      move=LNK1 water 3:UND-fetch.water
   '... (she) went to fetch water.'

(ii) ... *la'a*   *ni-waro'.*
       move REFL-wash
   '... (she) went to wash.'

Table 3
Complex water terms.

Simple term	Complex term	Gloss	Translation
ira 'water'	*ira liu*	water stagnant	pond, lake
	ira mu'a-dukal	water land-fall	waterfall
	ira kirin	water old	permanent spring
	ira mata su'ul	water child young	transient spring
	ira-keta	water-dyke	paddy, wet rice field
	ira-ina	water-eye	spring
	meti-ira	sea-water	sea water
	ira-ha'a	water-mouth	lagoon
	ira-tana	water-hand (?)	water canal to the paddy
	ira-mana	water-hole	water hole, irrigation
meti 'sea'	*meti-walir*	sea-edge	beach
	meti-ira	sea-water	sea water
	meti hat	sea dry	low tide
	meti penu	sea full	high tide
weir 'river'	*weir-tala*	river-branch	branch of river
	weir-ha'a	river-mouth	estuary, river mouth
	weir-walir	river-edge	river bank, shore
lorin 'rivulet'	*lori mata*	rivulet child	small rivulet

these have to do with field irrigation, and presumably involve water directed to a certain location; however, their exact semantics are not quite clear.

The relative paucity of lexical elaboration with respect to seascape is noticeable. My consultants were all from around Iliomar town and the sea does indeed not play any major role in their daily lives, a fact which they attribute to the big waves and rough seas of the south coast. When I tried to elicit names for specific parts of the sea, consultants came up with a variety of expressions as listed in (25). However, all of these made the distinct impression of being more or less made up ad hoc, as evidenced, for instance, by the variety of phrases used by different speakers to convey the concept of 'open sea'.

(25) *meti-mata*   sea-child   'strait, sound, bay' (?)
      meti ki=lokun   sea 3:POSS-ravine   'bay'
      meti pere   sea big:SG   'deep sea, open sea'
      meti leetana'   sea in.the.middle   'open sea'
      meti hopan   sea featureless   'open sea'
      meti-wali-mana   sea-edge-hole   'underwater current, deep sea channel' (?)
      meti ki=puka   sea ATTR=hilly   'cape'

Data from the director–matcher task yield other circumlocutions for 'cape, peninsula', where *meti* 'sea' does not function as a head noun. (26) and (27) show examples. Their presence further confirms the ad hoc status of the sea-related expressions listed in (25).

(26) . . . *larin*   *un*   *meti-mutu-dukal.*
            mountain   one   see-be.inside:RED-fall
      '. . . there is a cape.'
      (lit. a mountain is falling into the sea)

(27) *Larin*   *ka'u-ka'u*   *meti-mutu-ufe-la'a*. . .
      mountain   RDL-small   sea-be.inside:RED-VDEM.LOW:RED-fall
      'Down there are small capes. . .'
      (lit. small mountains are going into the sea down there)

Since Iliomar is only about 5 km from the coast as the crow flies, the paucity of sea-related terms is remarkable, especially when compared to the rich inventories found, for instance, on several Melanesian islands (see e.g. Levinson, 2008; Senft, 2008). This linguistic limitation reflects the distinctive landward orientation and associated neglect of the sea observed in most Timorese societies (McWilliam, 2003).

River parts are denoted by *weir-tala* 'branch of a river', *weir-walir* 'edge of a river', and *weir-ha'a* 'river mouth'. *Weir-tala* seems to project an image of the river as a tree, while *weir-ha'a* uses a body part metaphor; there seems to be no consistent metaphorical image used for the expression of parts of the river (see also Section 6). *Weir-tala* 'branch of a river' is used more or less synonymously with *lorin* 'rivulet' and *lori-mata* 'small rivulet'. Note, in the latter, the loss of the final nasal; this is further discussed in Section 6. *Mata* 'child' is in one case also used as a modifier with *weir* 'river', i.e. *weir mata* 'small river', which is used to explain the concept of *lorin* 'rivulet'. The modifier *mata* 'child', also used with *meti* 'sea' (see 21) and to refer to seasonal springs (*ira mata su'ul*), is not found with landscape terms other than those referring to water.

Commonly named water features include water courses, springs, and lagoons. Only two proper names for parts of the sea have been found: *Meti nami* (lit. male sea), which refers to the Timor sea to the south of the island, and *Meti tufur* (lit. female sea), which refers to the Banda sea to the north of Timor.[14] River names are particularly interesting in that they do not apply to the whole of a watercourse, but to individual sections of a river. They are thus not coextensive with the generic term *weir* 'river'; this is in stark contrast to other toponyms, which appear to be largely coextensive with generic terms. An example is the river which passes near the village of Tirilolo: the section nearest to that village is called Paifaka weir (*pai* 'pig', *faka* 'trough', *weir* 'river'); further down its course, it is known as Atankon, apparently due to the fact that it flows through a narrow rock channel there (*kon* 'narrow'). Further down its course again, it is known as Weirheke, due to the fact that this section cannot be crossed (*weir* 'river', *heke* 'difficult'). This is followed by a section known as Lihulu (meaning unknown), then Iliimir (*ili* 'rock', *imir* 'red'), and, finally, where it flows into the sea, as Liulolor (*liu* 'stagnant', *lolor* 'straight, right'). It is not quite clear how long these sections are, and how distinct the boundaries between the individually named sections are. It is possible that the name changes reflect the partitioning of the land according to clan ownership. The river names which are partly or wholly transparent describe physical or utilitarian characteristics of a given section of river. They thus follow a different categorization principle from the generic term *weir* 'river', which does not encode affordance.

4.3. Vegetation

Simple terms referring to vegetation and land use are *alah* 'forest', *ama* 'garden, field', *ado* 'orchard, plantation', *dana* 'abandoned garden site' and *lofo* 'small vegetable plot'. Since several of the members of this category refer to man-made and agricultural features, I also include *keta* 'dyke between rice paddies', even though it is not per se a feature of vegetation. As discussed in Section 4.2, *ira* 'water' is also used in the sense of 'rice paddy' and may thus be added to this list. A notable characteristic of this set of terms is the relative detail with which types of fields and gardens are distinguished. Unlike the terms referring to features of the land and water discussed in Sections 4.1 and 4.2, respectively, there appear to be no lexicalized modified phrases or compounds in the domain of vegetation.

An *ama* 'garden' may be planted for two or three years, before it is abandoned and becomes a *dana*. After a number of years, which may range from five to twenty, farmers will go back to it and plant it again. People's fields are often at a considerable distance from their homes, indeed up to several hours' walk. In fact, the distance from the house is one of the defining characteristics of *ama*, mentioned by all those questioned. Ownership of a garden is acknowledged in any state, and people will not farm someone else's abandoned garden site.

Lofo or *lofo-lofo* refers to a small vegetable plot near people's houses. *Lofo*s are fenced in; in fact, the simplex *lofo* is probably more accurately translated as 'enclosure', as it can also refer to a pen for keeping livestock such as pigs or buffalos. The reduplicated *lofo-lofo* seems to refer exclusively to a vegetable plot, and specifically to a rather small one. The simplex, in contrast, denotes a relatively large plot. A *lofo* tends to be used for rather longer than an *ama* 'field'. While it differs from a field called *ama* in several respects and speakers insist that the two are quite distinct, the sentence in (28) suggests that *ama* is, nevertheless, used as a hypernym to *lofo*.[15]

(28)   *Lofo-lofo*   *ere*   *ama*   *ke*   (…)   *fi-lopu-male'*…
       RDL-vegetable.plot   1DEM   field   REL   1pi-house-be.near
       'A 'lofo-lofo' is a field near our house…'

Ado 'orchard' is understood to be distinct from *ama*. This is where long-lived trees are planted, such that specific orchards may be used for centuries at a time. Pinto (2004: 53) gives *homo* 'a group of areca or coconut palm trees standing close together' as a (near) synonym to *ado*. This term is not listed in Table 1 because my consultants were unable to explain it in isolation. They do, however, use it in the phrase *homo-lek* (*homo* 'group of trees' *lek* 'leftover') to refer to a little forested river island; compare *mu'a-lek* 'river island' discussed in Section 4.1.

Keta refers to the dyke between rice paddys, and, as part of the expression *ira-keta*, to a rice paddy (see discussion in Section 4.2). Compounds of this type are usually made up of two opposing or complementary notions and express a superordinate concept. *Ira* and *keta* are thus perhaps understood as antonymic. *Ira* 'rice paddy' is frequently encountered in a parallel phrase *ira pure // ama paun* 'farm' (29), showing that it can also contrast with *ama* 'garden, field'.

(29)   …   *amuni*   *ira*   *pure*   *ma'en*   //   *ama*   *paun*   *ma'en*…
          person   water   cultivate   know   garden   tear.out   know
      '… people know how to take care of rice paddies and fields…'

Alah 'forest' differs from all of the previously discussed terms in this section in that it does not refer to a man-made feature. It contrasts with *mu'a namar* 'land that has been cleared of trees', *mu'a hopan* 'flat or treeless land', or *mu'a hare-hare'* 'clean land, land with no vegetation' (see Section 4.1). *Alah* functions on two levels; on the one hand, it is a hypernym referring to any type of forest, and on the other hand, it contrasts with *alah kirin*, or just *kirin*, 'virgin forest'. On this lower level,

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[14] The same semantics are found in all Timorese languages for these parts of the sea.
[15] It is possible that *ama* functions on two levels, namely as a specific type of field, but also as a hypernym for at least *dana* 'abandoned field site', *lofo* 'small vegetable plot' and *ama* 'field'. See the discussion of *alah* 'forest' below.

alah refers to a not very dense forest cover, which is managed by humans. As mentioned above, *kirin* is translatable as 'old, valuable, taboo', which reflects the spiritual associations of virgin forest in Makalero culture. Another landscape term that makes use of this term is *ira kirin* 'permanent spring' (see Section 4.2).

Individual instances of vegetation features are not commonly named, but are referred to by the name of the larger feature or area they are located in. The quote in (30) makes clear that the vegetation cover, in this case forest, is treated as distinct from the land. (31) shows some examples a speaker gave as to how people might refer to their gardens: these designations make reference to the feature with which they are associated; since most people would own only one field in a given area, the name of this area, together with the ownership, is sufficient to identify it.[16]

(30) *Mu'a=wa*   (…) *lafu' ere   ki-nei=ni   ere'.*
     land=REFL   live   1DEM   3:POSS-name=CTR   1DEM.V
     'The land which (it) lives on, this is (the forest's) name.'

(31) *ama Denufae*   'the Denufae (mountain) garden'
     ama Keelele   'the Keelele (mountain) garden'
     ama Irabere   'the Irabere (river) garden'

5. The grammar of landscape

Makalero nouns fall into two classes based on whether or not they can be construed as grounds in locative descriptions without a locative verb: place names and landscape term may function as predicates with a locative interpretation without an overt locative verb, whereas all other nouns need to be expressed as arguments to a locative verb. I argue that this division of the nominal domain reflects Lyons' (1977) distinction of an ontological class of 'places' and a class of 'entities'.

First, a brief discussion of few aspects of Makalero grammar is necessary. Makalero is close to isolating, and there are only very few derivational and inflectional processes, all of which are limited in productivity. The unmarked constituent order is AOV/SV. Modifiers, such as the aspect marker *hai* and the negator *nomo*, are pre-verbal and follow the O argument, but precede non-referential arguments or constituents referring to location and manner, which combine with the verb into a morphosyntactic complex.

Word classes are flexible, and the vast majority of lexical items can be used as both arguments and predicates simply by being placed in the appropriate position in the clause. The distinction between nouns and verbs in Huber (2011: 100, 126) is mainly based on regular semantic correspondences between lexical items in either predicate or argument function (following Haspelmath, 2001: 16543). Thus, a verb 'to x', if used as an argument, generally denotes 'the act of x-ing', 'the product or result of x-ing', or 'the instrument involved in x-ing'; an example of the latter correspondence is shown in (32). A noun 'x', on the other hand, is generally translated as 'be (an) x' if it is used predicatively, as shown in (33) and (34).

(32) *Asi-upa*   *mara=ni kus   mei ani kus=ana...*
     1s:POSS-father   go=LNK1 blow   take 1s blow=INT
     'My father then took his blowtube and was going to shoot me...'

(33) … *fi-dada*   *fi-upa*   (…) *hana'e fi-asu*   *lolo...*
        1pi-grandparent   1pi-father   REM.PT 1pi-for   say
     '… our grandfathers and our fathers (…) told us long ago…'

(34) … *era ma'akini*   *fi-dada-raa=po...*
        3p   wrongly.think 1pi-grandparent-PL=ADVR
     '…they thought it was crocodiles, but…'[17]

The presence of the aspect marker *hai* preceding a constituent is a good indicator for its predicate status. With states, this aspect marker usually selects an initial boundary and the ensuing state; this is shown in (35) with a nominal predicate, and in (36) with a verbal one.

(35) … *hai   watu   til.*
        NSIT   day   afternoon
     '… it is already afternoon.'

(36) *Kiloo hai   hisit.*
     3s   NSIT   sick
     'He is (already) sick.'

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[16] However, one consultant claimed gardens did have proper names. This requires further investigation.
[17] Note the use of the avoidance term *fi-dada* 'our grandfather' for crocodile.

The special status of place names and landscape terms hinges on the expression of the ground in the description of a locative configuration. Makalero has an array of verbs with more or less specific meanings expressing a locative relation; the ground object is constructed as a locative argument to such a locative verb. Some examples are shown in (37). For a more thorough treatment of locatives in Makalero, see Huber (in preparation).

(37) *iskola-isi'*   'at school'
      school-be.at

      mana-mutu'   'in the hole'
      hole-be.inside

      ki-lopu-male'   'near his house'
      3:POSS-house-be.near

      ki-puulata   k-ua'   'on top of his head'
      3:POSS-head   3:OBJ-be.on.top

Place names and landscape terms differ from the majority of nouns in that they do not require a locative verb in order to express the ground. Instead, they have this reading if they are constructed as nominal predicates, as in (38) through (41). The use of the clitic conjunction *=ini* following the preceding verb as well as the aspect marker *hai* in (38) shows clearly that the place name Dili functions here as a predicate (note, however, that neither of these is obligatory). I will in the following use the cover term 'place nouns' to refer to the class of nouns consisting of place names and landscape terms.

(38) . . . *bis-ika'=ini   hai   Dili.*
          bus-up.in=LNK1   NSIT   D.
      '. . . (he) took the bus and (then was at) Dili.'

(39) . . . *mu'a-isa=ni   la'a=ni   Wanri Opanur.*
          land-go.down=LNK1   move=LNK1   W.O.
      '. . . (we) went down and then went (and then were at) Wanri Opanur.'

(40) *Ini   aire'   hau   la'a   meti.*
      1pe   now   all   move   sea
      'We just went to the sea.'

(41) . . . *meti=ee   tou-la'a=te'e   ma'u=ni   larin.*
          sea=DEF   across-go=after   come=LNK1   mountain
      '. . . (they) crossed the sea and after that came to the mountain.'

All of the above examples illustrate a goal construction in which predicatively used place nouns with a locative interpretation follow a movement verb; the place noun predicate denotes a static location resulting from the movement expressed by the preceding verb. This construction is usually found in utterance-final position, where it is associated with a falling intonation contour. This is the most common context in which place nouns are found as nominal predicates with a locative interpretation. They can, however, sometimes be found outside of this construction, referring in such cases to a stative location rather than a goal, as in (42).

(42) *Dirimuni   ere   ki-rate   ere   were   hau   ude-Dirimuni* . . .
      D.   1DEM   3:POSS-grave   1DEM   2DEM   all   VDEM.HIGH:RED-D.
      'The graves of the Dirimuni people are all up there at Dirimuni. . .'

Alternatively, place nouns can be constructed as arguments to locative verbs, just like non-place nouns. Examples are shown in (43) and (44).

(43) . . . *ama-isi'=ini   sirbisu.*
          garden-be.at=LNK1   work
      '(He) is in the garden working.'

(44) *Kiloo   hai   Dili-isi'.*
      3s   NSIT   D.-be.at
      'He is already in Dili.' (chat105)

It is not entirely clear what the difference is between these two constructions. It is notable, however, that the locative predicative use of place nouns is truly common only in the above-mentioned goal construction; with stative locations,

the use of a locative verb is far more common. This may have to do with the distinguishability of the goal construction and associated ease of processing, as opposed to the difficulty of processing a locative predicative place name without the help of any associated features such as the presence of a movement verb or a falling intonation contour. Furthermore, the use of a locative verb allows a speaker to express a more specific locative relation rather than the very general association expressed by the locative predicative use of a place noun.

In summary, place nouns and landscape terms, if used predicatively, can be interpreted as predicating a location, i.e. as expressing the ground in a locative description. This suggests that locative meaning is to some degree inherent in them, and I thus call them 'place nouns'. In contrast, other nouns always need to be constructed as arguments to a locative verb in order to be able to function as grounds. Used as nominal predicates, they invariably express identity with a referent (see (34) above).

A distinction between a 'what' category and a 'where' category has been proposed both in semantics (Lyons, 1977) as well as cognitive science (Landau and Jackendoff, 1993). In Lyons (1977), these are the ontological classes of 'first-order entities' and 'places'. First-order entities are defined as physical objects observable in the world, which are relatively constant as to their perceptual properties, are located in a three-dimensional space, and are publicly observable (Lyons, 1977: 442f.). Places, on the other hand, are spaces within which entities are located; prototypical members of this class are, apparently, place names (Lyons, 1977: 474f.). Landscape terms, according to Lyons (Lyons, 1977: 693), take up an intermediate position between these two classes: "Such aggregates, collections or conglomerations of matter as cliffs, mountains, clouds, lakes and so on" are "either permanently or normally static" and "may or may not be perceived and conceptualized as first-order entities: their status is ontologically indeterminate; and they may be treated differently by different languages". Cablitz (2008), based on the use of two distinct locative prepositions, shows that landscape terms in Marquesan can indeed be classified as either places or objects, depending on the context. In contrast, Makalero landscape terms do not exhibit such a variable status, but are grouped with places.[18]

6. Landscape, language and culture

Several organizational principles for landscape categorization in language have been proposed, among them perceptual salience (i.e. similar environments would always be similarly categorized, even in unrelated languages), utilitarian properties (i.e. similar subsistence systems would lead to similar categorization), and cultural and linguistic models of the speech community (e.g. the metaphoric mapping of landscape onto another semantic domain, Burenhult and Levinson, 2008: 142).

All these driving forces are discernible, to some degree, in Makalero. Section 4.1 remarks on the paucity of reference to valleys in the director–matcher tasks, as well as the absence of toponyms for such features. Burenhult and Levinson (2008: 141) also remark on the absence of a term for 'valley' in several languages of their sample. This may suggest an overall lower salience of depressions, as opposed to elevations. Utilitarian driving forces can be recognized in the lexical density, or lack thereof, associated with specific landscape feature types. For instance, the relative richness and detail with which types of fields and vegetation cover are named reflects the small-scale farming subsistence system of Makalero speakers; the paucity of sea-related vocabulary can be seen in connection with the limited role played by the sea in the life and subsistence of the inhabitants of the Iliomar region. The distinction between permanent and transient springs, *ira kirin* and *ira mata su'ul*, respectively, also fits into this category (see discussion in Sections 4.2 and 4.3, respectively).

Other distinctions can be linked to cultural models, and it is these that will be discussed in the remainder of this section. A common trait of Austronesian-speaking cultures, which has been shown to permeate the Papuan-speaking Fataluku culture of Timor as well, is a preoccupation with duality and pairings (McWilliam, 2007a,b). Ordered pairs of lexical parallels are used extensively in ritual and formal speech in a multitude of languages across eastern Indonesia (Fox, 1988). A similar preference for pairings is reflected in the fact that a large proportion of the nominal inventory for non-man-made features in Makalero can be grouped into parallel pairs of near-synonyms, as listed in (45). As discussed in Sections 4.1 and 4.2, speakers would normally characterize the two members of a pair as being "the same", although they can explain differences between

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[18] The availability of the locative predicate construction has been demonstrated only for a subset of the basic landscape terms shown in Table 1. While such constructions are used in spontaneous speech, Makalero speakers avoid them in elicitation and do not accept them in grammaticality judgments, preferring instead the use of postpositional phrases. In my current data set, the landscape terms listed in (iii) occur as locative predicates; additionally, I made note of sentence (40) as I heard it uttered in spontaneous speech. If we include *meti* 'sea' from (40), this short list of landscape terms includes terms from all three subgroups discussed in Section 4. The presence of two Portuguese loans, *kaantreru* (from *canteiro* 'flower bed') and *kintal* (from *quintal* 'back yard'), shows that these nouns form a semantically coherent group.

(iii)   *lokun*   'ravine'
         ama   'field, garden'
         larin   'mountain'
         kaantreru   'garden, vegetable plot'
         kintal   'garden, vegetable plot'

the denotation of the two terms when pressed to do so. They are used as such in parallel speech, but only one member of each pair is commonly found in everyday language.

(45) *larin*   *pukar*
      'mountain'   'hill'

      pa'an   *lokun*
      'valley'   'ravine'

      toil   *fifir*
      'slope'   cliff'

      ili   *uar*
      'rock'   'stone'

      weir   *lorin*
      'river'   'rivulet'

      (*ado*   *homo*)[19]
      'orchard'   'grove'

Cultural preoccupations also appear to lie at the base of the subsets of landscape terms picked out through their complex morphological makeup on the one hand, and through the use of a body part and human metaphor on the other. The subgroups defined by these criteria form a group of terms denoting elevations and water features, both of which are culturally highly significant. As mentioned in Section 1, animist traditions are an important part of Makalero cultural life, despite the fact that most speakers identify themselves as catholics. In this tradition, the landscape is imbued with considerable potency, and mountains are of particular importance. Many are sites of ancestral graves, which are considered sacred and access to them is forbidden to the uninitiated. They are associated with potent spirits called *ki-ouar* (its lord), *ki-eu* (its spirit), *ki-pik* (its bitterness, or poison), *ki-diaapu* (a loan from Portuguese *diabo* 'devil') or *ki-uruwatu* (an expression made up of *uru* 'moon' and *watu* 'sun'; notably, this is also used to refer to the Christian god).[20] These terms reflect the ambivalent status of these beings: on the one hand, they protect people, especially to members of the clan associated with the place in question, from evil. On the other hand, however, these spirits are also very demanding and downright dangerous; they will react violently to neglect or desecration of the sacred site. They may also bring misfortune on an uninitiated person who dares go there, and young people need to be introduced by an influential member of the community. Similar properties are associated with rivers, springs, and possibly lagoons, although mountains are the most prominent. This kind of agency is accorded to landscape in many South-East Asian societies (Allerton, 2009: 10f.). Through its association with the ancestors, the landscape is also intimately connected to the organization of Makalero society today; all Makalero clans have their own sacred sites. In fact, the phrase *mu'a ki-ouar* 'lord, owner of the land' is used both for the spirit of a place as well as for aristocratic members of the clan associated with it (cf. also Hicks, 1976). There is an interesting overlap between place names and clan names, with some of them referring both to features of the landscape as well as to clan groups, which will be discussed in more detail below.

Morphologically, the simple landscape nouns listed in Table 1 fall into two sets: the majority of them are monomorphemic, while five items are derived from more basic verbal or nominal notions. Given that Makalero is largely isolating, and most morphemes can be used either as arguments or as predicates with no morphological adjustment, the fact that about a quarter of landscape terms are derivations appears significant. Semantically, there is a clear theme to the derived landscape terms: all refer to either elevations or flowing water. Both these categories are of special significance in Makalero culture in being considered the home of potent spirits. Table 4 juxtaposes monomorphemic and derived landscape terms.

Larin 'mountain' is an extension of the noun *larin* 'side of the body, flank', shown in (46).

(46) ... *ate=ee*   *kiloo*   *ki-larin*   *k-ata-nat.*
           tree=DEF   3SG   3:POSS-flank   3.UND-be.in.contact:RED-stand:SG
      '... the tree stands at his side.'

Larin 'flank' itself is presumably a derivation of a verbal element *lari* 'aslant, crooked', as shown in (47).

(47) *Ki-lopu*   *asi-lopu*   *lari-nat.*
      3:POSS-house   1SG:POSS-house   aslant-stand
      'His house stands next to mine (but not in a straight line/row).'

The suffix *–n* is most likely a reduced form of the nominalizing suffix *–ini* (cf. Huber, 2011: 104). In some place names, 'mountain' is found as *lari*, without the suffix.

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[19] This pair is from Pinto (2004); my consultants did not seem to use *homo* in this sense (see Section 4.3).
[20] Obligatory possessive marking expresses inalienable possession in Makalero (cf. Huber 2011: 123).

Table 4
Monomorphemic and derived landscape terms.

Monomorphemic		Derived	
Makalero	**English**	**Makalero**	**English**
mu'a	land, ground	*larin*	mountain
pa'an	valley	*pukar*	hill
lokun	ravine	*sokor*	saddle, pass
toil	slope	*weir*	river
fifir	cliff	*lorin*	rivulet
ili	rock		
ira	water		
meti	sea		
tauh	wallow, pond		
alah	forest		
ama	garden, field		
ado	orchard, plantation		
dana	abandoned field		
lofo	vegetable plot		
keta	dyke between rice paddys		

Pukar 'hill' is derived from a verb *puka* 'be hilly', exemplified in (48).

(48) ... *ha'awein un   ki=na'u   puka mais nomo hau larin-rusun*...
         place   one ATTR=just hilly but NEG all mountain-tall
     '... a place which is hilly, but not as tall as a mountain...'

An unproductive –*r* formative is found in nominalizing function in several cases in Makalero (cf. Huber, 2011: 102). *Sokor* 'pass, saddle' is derived using the same *r*-formative from the verb *soko* 'notch, become notched', as seen in (49).

(49) *Peregu-nese-lasi*   *entaun hai soko.*
     nail-be.in.the.middle:RED-cut thus   NSIT notched
     'Cut hitting a nail, so it becomes notched (of a machete)'

The verb may also be used to describe landscape, as in (50).

(50) ... *soko-soko-lori=si*   *ho'o pukar ho'o pa'an*...
         RDL-notched-flow=LNK2 some hill   some   valley
     '... (water) flows, cutting itself in, and some (places) become hills, and some become valleys'

Weir 'river' appears to be derived from *wei* 'blood', again through the use of the *r*-formative.[21] *Lorin* 'rivulet' is derived from *lori* 'flow' with the suffixal –*n* observed also in *larin* 'mountain'. An example of this verb can be seen in (50). In some cases, *lorin* 'rivulet' is used nominally without this final nasal, e.g. in the phrase *lori mata* 'small watercourse', where *mata* 'child' stands in the modifier slot as a diminutive (see also below). A loss of the nominalizing suffix in certain circumstances has also been observed with the similarly formed *larin* 'mountain', although only in place names.[22]

A second subset of landscape terms can be identified by the metaphoric mapping of other semantic domains to landscape. The items listed in Table 5 utilize a body metaphor,[23] while those in Table 6 are based on categories of humans. This subset of landscape terms partly overlaps with that picked out by morphology as shown in Table 4; semantically, metaphor, too, applies to elevations and water features. However, while metaphor impinges on landscape, no systematic mapping principle emerges from the terms in Tables 5 and 6.

One speaker also used *meti mata* (sea child) for a strait or a bay, an expression that was characterized as made up ad-hoc in Section 4.2. The human metaphor is also found in proper names, where the terms *nami* 'male' or *namiraa* 'man', and *tufur* 'sister' or *tufuraa* 'woman' are used. Examples are shown in (51) and (52) (see also Section 4.2). The translational equivalents of these expressions are also found in other Timorese languages as proper names for the same features and may thus represent calques.

(51) *meti*   *nami*   'Timor sea; sea to the south of Timor'
     sea   male

     meti   *tufur*   'Banda sea; sea to the north of Timor'
     sea   sister

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[21] Note, however, that the neighbouring Austronesian languages use a very similar root for 'water', e.g. Waima'a and Naueti *wai* 'water', Tetum *bee* 'water'.
[22] Another possible candidate for the same alternation is *lo'on* 'sky' and the form *lo'o* found in place and clan names.
[23] Note also *ilun* 'offering placed in the middle of the rice field to ensure a good harvest', derived from *ilu* 'navel'.

Table 5
Body part metaphor in landscape.

Makalero	English	Body part
larin	mountain	*larin* 'flank, side of the body'
weir	river	*wei* 'blood'
weir-ha'a	river mouth, estuary	*ha'a* 'mouth'
ira-ina	spring	*ina* 'eye'
ira-ha'a	coastal lagoon	*ha'a* 'mouth'

Table 6
Human metaphor in landscape.

Makalero	English	Human noun
ira mata su'ul	transient spring	*mata* 'child'
lori mata	small rivulet	*mata* 'child'

Table 7
Proper names denoting both places and clans.

Place and clan name	Feature type denoted by place name
Ailebere	village
Komil	area
Dirimuni	mountain
Ta'amatu	river
Iliomar	mountain
Maluhira	village (?)
Loorasa	mountain

(52) *Matebian ki-namiraa*   'the higher of the two peaks of Mt. Matebian'
      M.   3:POSS-man

      Matebian ki-tufuraa   'the lower of the two peaks of Mt. Matebian'
      M.   3:POSS-woman

Section 4.2 also mentions the expression *weir-tala* (river-branch) 'branch of a river'. This differs from the terms listed above in that it projects an image of a tree.[24]

The subsets of landscape terms picked out through their complex morphological makeup on the one hand, and through the use of a body part and human metaphor on the other, thus form a group of terms denoting elevations and water features. The two groups overlap in *larin* 'mountain' and *weir* 'river', two landscape features of particularly high importance.

Also clearly linked to cultural preoccupations is place naming. To my current knowledge, named features include mountains and hills, certain rock formations, water courses and bodies, and springs, i.e. the same semantic subgroup of culturally significant features.

It has been suggested that landscape and social organization are tightly interconnected in Makalero culture. The Makalero society is divided into a number of patrilocal clans or descent groups, and each of these groups has their own sacred sites in the landscape, many of which are associated with ancestral graves. There is an overlap between clan names and place names, in that clans tend to be named after the places where they live (or lived at some point). Thus, several proper names have been found to denote both a place and a social group.[25] A variety of such proper names is listed in Table 7, along with the type of landscape feature denoted by the toponym. Interestingly, some names given to me as clan names were dismissed as place names by other speakers.[26] Note that clan names and toponyms also share a distinctive phonological feature, namely the preservation of the phoneme /b/, which, in present-day Makalero, has merged with /p/ in all other domains (see Schapper et al., 2012).

Speakers can usually tell which settlements are populated by members of which clan. Notably, the place of residence of a given clan is usually distinct from the place designated by the clan's proper name. For instance, the village Ailebere is mostly populated nowadays by people of the Dirimuni clan. The Dirimuni hill, however, is located at a distance of some 8 km in a north-easterly direction. A better understanding of the current settlement patterns and a thorough mapping of places whose names double as clan names will presumably lead to a better understanding of the settlement history of the Makalero area. In general, however, the relationship between clan and landscape names requires more investigation.

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[24] Several place names make use of *mata* 'child' with reference to trees.
[25] A similar overlap between clan names and geographic names is found in Fataluku (McWilliam, 2007b), as well as the Austronesian Waima'a language, spoken in the Baucau district (Himmelmann and Hajek, 2005: 1).
[26] Speakers agree on the big, powerful clans, but there is little agreement with respect to the small ones – as well as with respect to the total number of clan groups found in Iliomar.

7. A comparative perspective

This section starts with a preliminary comparison of the landscape-related inventories in the other Papuan languages of Timor, namely Makasae, Fataluku and Bunaq. In what follows, I try to situate Makalero in a broader context, making use of descriptions of the landscape domain in other languages in the wider area. On this basis, I tentatively postulate a "Papuan" type of landscape categorization, which reflects an essentially land-oriented culture, with considerable importance attached to watercourses and perhaps elevations; this contrasts with the more widely known Austronesian type, in which the sea plays an important role.

Makasae, a language very closely related to Makalero, is spoken by a population of some 90,000 in parts of the Viqueque, Baucau and Lautém districts. The data collection for this article was conducted in Baucau town, the second-largest urban centre of East Timor, with some 20,000 inhabitants.[27] The town is located on the north coast of the island, on top of a steep slope, at approximately 2 km from the coast. Numerous small watercourses have their source in the area. Fataluku is spoken by a population of some 30,000 in Lautém, East Timor's easternmost district. Fieldwork was undertaken in Lospalos, the main town of the district, with some 17,000 inhabitants. Lospalos is on an inland plateau which consists mostly of grass- and sedgeland and is dominated by Lake Iralalaro, the largest freshwater wetland on the island. Finally, Bunaq, a language with some 80,000 speakers, is spoken in central Timor on both sides of the border between East Timor and Indonesia. In East Timor, Bunaq speakers inhabit the Covalima, Bobonaro and Ainaro districts, and adjacent parts of the Belu regency in West Timor. It is found in both the mountainous inlands as well as along significant portions of the south coast in both countries.

Speakers of all groups, even those living in towns, rely to a large degree on subsistence farming.

Table 8 shows the simple Makalero landscape terms from Table 1 and their counterparts in the other Papuan languages of Timor, Makasae, Fataluku and Bunaq.[28]

It is interesting to note a relatively low degree of agreement over all four languages. Even the comparison of Makalero with its closest cognate Makasae, which generally have a very high degree of correspondence in content vocabulary (see Huber, 2011: 10) yields only nine clear cognates out of a total of 21 listed terms. Indeed, the only landscape terms to have direct correspondences over all four languages are *mu'a* 'land' and *ira* 'water'. It is possible that these two might qualify as unique beginners in the landscape domain in East Timor Papuan (see also discussion in Section 4). With respect to the other terms, it seems that semantic shifts are very common.

While Makasae *lari* 'mountain' is cognate to Makalero *larin*, it is noticeable that its cognate lacks the derivational suffix –*n*; in Makalero, too, this suffix is absent in a variety of place names (see Section 6). Makasae speakers around Baucau also use *bu'u-lari*, a compound of the words *lari* 'mountain' and *bu'u* 'hill', to refer to any elevation. Several younger people seemed to use *umurafa* for 'mountain'; this is actually a proper name for Mt. Matebian, which translates as 'mountain of the dead' (*umur* 'dead body (?)', *afa* 'rock'; the term *matebian* translates as 'soul of a dead person' in the local lingua franca Tetum). Baucau is situated on a plateau, and Matebian is the most prominent mountain massive visible from a distance. The element *afa* 'stone' in Umurafa is cognate to Fataluku *apa* 'mountain'. The Bunaq term for mountain, *lolo*, appears to be cognate to Makalero *larin* 'mountain'; Proto-Timor ∗r regularly changed to /l/ in Bunaq (see Schapper et al., 2012). Interestingly, none of the cognate forms for mountain appears to share with Makalero the meaning 'flank, side of the body'.[29]

Makasae *bu'u* 'hill' does not appear to be cognate with Makalero *pukar* 'hill', since reflexes of Proto-Timor ∗k either change to /ʔ/ or remain /k/ in both languages (Schapper et al., 2012). The element *puka* in Fataluku *tupuka* 'hill' is, however, certainly cognate, though the meaning of the element *tu*- is unclear. *Apa moko*, which seems to be used more frequently than *tupuka*, literally translates as 'mountain child', i.e. small mountain.

In the domain of concave landforms and water features, a variety of semantic shifts are noticeable. Fataluku (*apa*) *letana* 'valley', which was given as the equivalent to Makalero *pa'an* 'valley', is cognate to Makalero *leetana'* 'be in the middle'. Makasae *mana* 'gorge', is cognate to Makalero *mana* 'hole', a word with much broader semantics. The Bunaq equivalent, *til* 'gorge, canyon, chasm', is very likely related to Makasae *toil* 'slope'. Since *toil* is used more commonly in relation to concave features rather than to elevation (see Section 4.1), the semantic shift is only minimal.

Table 8
Landscape terms in East Timor Papuan.

Makalero	Makasae	Fataluku	Bunaq
mu'a 'land'	*mu'a* 'land'	*mu'a* 'land'	*muk* 'land'
larin 'mountain'	*lari* 'mountain'	*apa* 'mountain'	*lolo* 'mountain'
pukar 'hill'	*bu'u* 'hill'	*apa moko, tupuka* 'hill'	
sokor 'pass, saddle'			
pa'an 'valley'		*(apa) letana* 'valley'	*oko* 'valley'
lokun 'ravine'	*mana* 'gorge, ravine'		*til* 'gorge, canyon, chasm'
fifir 'cliff'		*ili* 'cliff'	*tirin* 'cliff'
toil 'slope, side of valley'	*wana* 'slope'	*laliru* 'slope'	*opi* 'slope'
			tewe 'slope, flank'
ili 'rock'	*afa* (*bere*) '(big) stone, rock'	*mataru* 'stone, rock'	*hol* 'stone, rock'
uar 'stone'	*afa* 'stone, rock'	*mataru* 'stone, rock'	*hol* 'stone, rock'
ira 'water'	*ira* 'water'	*ira* 'water'	*il* 'water'
meti 'sea'	*meti* 'sea'	*tahi* 'sea'	*mo* 'sea'
weir 'river'	*wair* 'river'	*(ira) veru* 'river'	*zol* 'river'
lorin 'brook, rivulet'	*wai-mata* 'small river, brook'	*ver moko* 'small river, brook'	
tauh 'pond, wallow'	*waga, liu* 'pond, wallow'	*lori* 'buffalo wallow'	
alah 'forest'	*ala* 'forest'	*irinu, alah* 'forest'	*mona* 'thin forest'
			nahun 'dense forest'
ama 'garden, field'	*ama* 'garden, field'	*pala* 'garden, field'	*mar* 'garden'
ado 'orchard'		*oco* 'orchard'	*natal* 'coconut and betel orchard'
dana 'abandoned field'	*ama-dane* (?) 'abandoned field'	*pala miri, temur pala*[a]*, lamolu* 'abandoned field'	*kolun* 'garden that is not newly cleared'
lofo 'vegetable plot'	*ama* 'garden, field'	*pala moko lekarune* 'small field' (?), *leku* 'garden' [b]	
keta 'dyke between rice paddys'?	(*keta* 'rice paddy')	(*ale pala* 'rice field', *ira pala* 'water field')	*kanu* 'dyke between rice paddys'

[a] The exact semantics of these terms need to be checked. According to my consultants, *pala miri* refers to a recently abandoned field, while *temur pala* is a field site that has not be planted for a year and longer.
[b] Consultants also gave *tintala* 'garden', a loan from Portuguese *quintal* 'back yard' involving consonant harmony (see Schapper et al., 2012 for other instances of the same process).

According to the World Loanword Database,[30] 'the physical world' is among the most loanword-resistant semantic fields. In this light, it is interesting to see that Fataluku uses an Austronesian loan, *tahi*, for 'sea' (cf. Tetum *tasi* 'sea'). *Meti* is used in Fataluku with the meaning 'tide'; Table 3 in Section 4.2 shows that Makalero also uses *meti* to express the concept of high and low tides.

Notably, speakers of Makalero, Makasae, as well as Fataluku, had trouble finding a translational equivalent to 'island'; neither is such a term listed in Schapper's short Bunaq dictionary. Makalero speakers attributed this to the lack of smaller islands along the south coast, and the Fataluku speakers interviewed around Lospalos to their distance from the coast. However, speakers of Makasae in and around Baucau, who can readily see islands offshore, were also unable to think of a translational equivalent to Indonesian *pulau* 'island'.

The connection between 'river' and 'blood' discussed in Section 6 seems quite solid in the eastern Timor languages; blood in Makasae is *wai*, and in Fataluku *vehe*; Makasae *wair* and Fataluku *veru* 'river' are both derived through an r-formative. In fact, this connection has been confirmed by a Makasae speaker. Makasae *liu* 'wallow' is cognate to *ira liu* 'pond' in Makalero (see Section 4.2), while Fataluku *lori* 'wallow' is connected to *lorin* 'rivulet' in Makalero. It is unclear whether *lori* also means 'flow' in Fataluku.

Lastly, in the domain of vegetation and land use, there is a rather low degree of correspondence (aside from Makasae and Makalero). It is also noticeable that the nouns *ama* 'garden, field' in Makasae and *pala* 'garden, field' in Fataluku seem to have a much broader range of use than Makalero *ama*. Also, while *keta* in Makalero denotes only the dyke between rice paddys (as does *kanu* in Bunaq), the same word in Makasae seems to refer to the rice field proper.

To date, no in-depth analysis of the landscape domain in these languages has been carried out. Outside of Timor, different aspects of the conceptualization of space in Papuan language have been studied (e.g. Heeschen, 1982; Senft, 1997; Núñez et al., 2012), but there are very few studies only of landscape categorization. One of these is Holton's (2011) description of the domain in Western Pantar, a language in close vicinity to Timor on Pantar Island (Indonesia). The Papuan languages of Timor and Pantar are commonly assumed to be related in a family known as Timor-Alor-Pantar (henceforth TAP), and work to demonstrate this relation through rigorous application of the comparative method is underway (see Schapper et al., submitted for publication). Western Pantar is spoken in a dry environment dominated by a low volcano, where sulfurous, poisonous creeks are the only surface water (Holton, 2011: 145). Holton (2011: 143) stresses the importance of human affordance in this extreme landscape. While there are differences in detail, the inventory of generic landscape terms in Western Pantar in the domain of elevations, vegetated areas and seascape is essentially comparable to Makalero. Terms for veg-

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[30] Online at: http://wold.livingsources.org/

etated areas are relatively detailed and can be arranged on a scale of human modification, reflecting the importance of these features in a society of subsistence farmers. With respect to seascape, Holton (2011: 162) remarks on the paucity of relevant generic terms, which he relates to the limited role of the sea as a resource in the subsistence system of Western Pantar speakers.[31] This is paralleled by Makalero (see Section 4.2).

The most salient difference in categorization concerns water features. Western Pantar classifies water according to its usability: *halia* 'potable water', *tawá* 'sea water', *masi* 'acidic supersaline brine that dissolves clothing', and *matá* 'supersaline brine that may be used for washing, but not for drinking'. There is no overarching term for 'water' or 'watercourse'. This very clearly reflects the unique affordances of the Western Pantar environment. Makalero, as well as several other Alor-Pantar languages (Holton, 2011: 165) spoken in less volcanic environments, do have a general 'river' term to refer to bodies of flowing water.

Another significant difference between Western Pantar and Makalero is found with respect to place naming strategies. In Western Pantar, named features include gardens, trees, rocks, water sources, houses, and pools in the reef. Mountains are most usually referred to by the name of such features associated with them; for instance, a mountain may be referred to by the name of a village or a garden located on its slopes. Holton (2011: 156) reports some difficulty in finding names referring specifically to mountain peaks, even quite dominant ones. This, he argues, shows that cultural salience takes precedence of geographic salience: gardens and villages and their location are important to the day-to-day activities of Western Pantar speakers, while mountain peaks are not. This naming strategy differs significantly from what is found in Makalero, where mountain names are very prominent. In fact, gardens in Makalero tend to be named after the slope of the mountain they are located on (see Section 4.3). Similarly, a variety of village names includes the word *lari(n)* 'mountain' (e.g. Larimii, Tatalalarin, Kaidawalarin), suggesting that they are in fact named after mountains. Furthermore, the toponym Iliomar originally refers to the mountain at whose foot Iliomar town is located. Specifically, it appears to make reference to a natural feature on top of that mountain, a rock shaped like a house. From the mountain, the name was extended to apply to the settlement at its foot, and from there yet again to the subdistrict.[32] Section 6 shows how cultural and spiritual aspects are reflected in Makalero landscape classification in a variety of aspects. In Makalero, thus, it appears that spiritual importance takes precedence over day-to-day affordances, which in turn seem to underlie Western Pantar naming patterns.

The only detailed description of landscape categorization in another Papuan language is that by Levinson (2008) on the Papuan isolate Yélî Dnye. This language is spoken to the southeast of New Guinea, on the easternmost island of the Louisiade Archipelago, which is politically a part of Papua New Guinea. The landscape categories of that language differ significantly from those found in the TAP languages Makalero and Western Pantar. The most striking difference is the rich inventory of terms referring to different parts of the lagoon, which plays a vital role in the subsistence system of the islanders, although Levinson (2008: 262, 272) remarks on the lack of a unitary sea or lagoon term. The author (Levinson, 2008: 274) furthermore comments on the fact that the Austronesian language Kilivila's more developed terminology for the open sea beyond the lagoon. However, the inventory of relevant generic terms in that language given in Senft (2008) seems quite comparable, rather than considerably more complex, to that found in Yélî Dnye.[33]

There are also some similarities between Yélî Dnye and the TAP languages: Levinson (2008: 269) reports that there is no concept in Yélî Dnye that corresponds to the notion 'river'. Instead, watercourses are conceived of as three consecutive segments. The first of these, referred to as *mbwaa*, designates the upper, sweet water part of the river; the second segment, *pye*, refers to the tidal salt water reach, which can extend inland for a considerable length; *kpé*, finally, refers to the flow between the shore and the reef opening. Each of these segments is associated with a distinct type of fauna and different modes of transportation. These segments may be named individually, but there are also cases where they share one name (suggesting the existence of a secondary ontological entity). As discussed above, Western Pantar also lacks a general term for 'river', but distinguishes different bodies of water in terms of the quality of the substance and what it can be used for. Both systems are directly motivated by human affordances. On the other hand, Makalero as well as the other languages of Timor, and some languages of Alor and Pantar (Holton, 2011: 165), have a general river term.[34] Aside from this obvious difference, however, Makalero shares with Western Pantar and Yélî Dnye the practice of naming river segments individually. Holton (2011: 160) argues that this reflects the different aspects of human affordance provided by different river segments. The transparent ones among the Makalero river names suggest that human affordance is an important factor as well (see Section 4.2). A similar phenomenon is not described for the nearby Austronesian languages.[35] The conceptualization of rivers as a series of segments

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[31] According to Holton (2011: 162), this is in sharp contrast with neighbouring Austronesian settlements on Pantar. This situation differs from that found in Timor, where Austronesian societies share with the non-Austronesian ones a distinctive landward orientation (McWilliam, 2003). This may be interpreted as an adaptation of Austronesian societies to a non-Austronesian cultural trait.

[32] Speakers report that the Makalero people originally settled on mountain tops, before moving down to lower areas. As such, it is conceivable that mountain names may originally have been village names that were extended to be used for mountains. In present-day language, however, these toponyms refer to mountains.

[33] Senft (2008: 348) mentions five individually named parts of the open sea surrounding the Trobriand Islands, on which Kilivila is spoken. No similar proper names are mentioned for Yélî Dnye, although Levinson (2008) mentions proper names for specific features in the open sea, such as sea currents or sacred sites.

[34] Section 6 argues that Makalero *weir* 'river' is derived from *wei* 'blood'; this could perhaps be read as supporting the idea that rivers are not conceived of as primary, unanalyzable ontological entities, as in Western Pantar and Yélî Dnye.

[35] Although it has been reported for North and Central America (e.g. Kari 1996: 446, O'Connor and Kroefges, 2008: 307) and several of the contributions in Koch and Horcus (2009) seem to suggest its presence in Australia.

rather than as a unified whole may thus arguably represent a distinct "Papuan", as opposed to Austronesian, characteristic of landscape conceptualization.[36]

Levinson (2008: 266) further shows that in Yélî Dnye geology and physiography are independent of the vegetation, and that natural vegetation areas do not seem to have proper names (Levinson (2008: 267)). A very similar observation can be made for Makalero, where statements such as (30) imply that the vegetation cover is conceived of as separate from the actual land (Section 4.3). There is no comparable information for Western Pantar or Austronesian languages.

A noticeable difference that sets Makalero apart from other languages in the region (including both Papuan and Austronesian ones) is the fact that garden plots do not appear to be named.

A further commonality between Makalero and Yélî Dnye is the high density of place names and the division of the land according to ownership by clan groups, each of which has their own sacred places. In particular, it seems both cultures attach high importance to mountains and rocks as well as watercourses. While not phrased in these terms, Holton's (2011: 156) description of a living, embodied landscape embedded in local history seems to point in a very similar direction. While none of the case studies in Burenhult (2008) provide comparable information, it is seems reasonable to assume that this is a characteristic of animistic small-scale communities in general, rather than a possible Papuan trait.

A very tentative Papuan type of landscape classification might thus be postulated, which reflects a culture that is essentially land-oriented, with considerable importance attached to watercourses and perhaps elevations. However, more detailed studies of the landscape domain in both Austronesian and Papuan languages are required to substantiate this hypothesis. An important insight from the comparison of the Pacific area languages mentioned in this section is the adaptability of inherited systems to suit the environment its speakers settle in; this is shown clearly through the presence of an elaborate vocabulary for parts of the lagoon that is found in the Papuan language Yélî Dnye (see also Palmer, 2002 with respect to systems of spatial reference). Several of the authors quoted here (Holton, 2011; Levinson, 2008) stress the importance of human affordance, next to such factors as culture and perceptual salience, for landscape categorization. The comparison of the related languages Makalero and Western Pantar confirms the point made in Levinson (2008) as well as Brown (2008) that these driving forces can be at work in different places within the same language and shows that relative importance of these factors may vary considerably across closely related languages.

8. Conclusions

Huber (2011: 111) remarked on two peculiarities of place names in Makalero. On the one hand, they seem to follow a special phonological subsystem characterized by the presence of the phoneme /b/. This phoneme is also found in clan names, but is otherwise absent from the language. Huber (2011: 112) also discusses how place names can be interpreted as inherently locative if used predicatively in a specific construction. The study of the landscape domain has shed more light on both of these properties: It reveals that place and clan names share not only a phonological peculiarity, but actually overlap in that a number of clan names have been found to also denote features in the landscape. In other cases, speakers seem to disagree on whether a given name refers to a place or a descent group. The degree and nature of this overlap, however, requires more investigation. The present study has also shown that the nominal subgroup defined by the possibility of being read as denoting locations in predicative use is not limited to place names, but includes landscape terms as well. Indeed, this property is used to formally define landscape terms as a covert category in the Whorfian sense. Lyons (1977) suggests that landscape features are ontologically indeterminate and may be classified as either objects or places in different languages; I have argued that they group with places, rather than with objects, in Makalero.

The conceptualization of landscape as revealed by the inventory of general landscape terms in Makalero confirms the importance of both human affordance and cultural factors that is also stressed in several of the studies in Burenhult (2008). The comparison with the related language Western Pantar furthermore serves to show how similar cultural factors can lead to rather different outcomes: Holton (2011: 156) argues that it is the importance of specific features in day-to-day life which underlies the naming of landscape features, while in Makalero, it appears that spiritual associations are an equally important factor in place naming strategies. In general, the role of given landscape features in Makalero tradition and beliefs has been shown to be reflected in several ways in in the linguistic expression of landscape (see also Tuan, 1974 on topophilia, or the study of the affective bond between people and place).

A comparison with other languages of the region, both genetically related as well as unrelated, appears to point to the absence of 'river' (as a total, from source to mouth) as a primitive, unanalyzable semantic concept. It has been suggested that this may represent a common trait of Papuan-type languages; however, this claim is based on data from only three languages and a substantial amount of research into landscape categorization systems of individual Papuan languages is needed to substantiate it.

A variety of aspects require further research, among them the exact extension of the class of landscape terms. A list of further possible members of this class, which have been excluded from the present discussion, is given in Section 4. Further-

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[36] Incidentally, Foley (1986) also reports that riverine systems of spatial reference are pervasive in the mountainous highlands of New Guinea. This suggests a high importance of watercourses in Papuan languages and cultures in general. It is essential to keep in mind, however, that "Papuan" is a geographic, rather than a genetic, label. While Makalero and Western Pantar are in fact members of the same family, Yélî Dnye is not demonstrably related to any other languages of the region (see Henderson, 1995).

more, an investigation of the intimate relation, and indeed intertwining, observed between clan names and toponyms, may provide insights with respect to landscape categorization as well as the settlement history of the Makalero area.

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