The system of spatial reference in Kadorih

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In this paper, I will describe the system of spatial reference in Kadorih (West Kalimantan). This language has a number of spatial indicators such as relative part or region, relative orientation, and exophoric demonstratives. I will discuss how relative part, region and direction are semantically and morpho-syntactically related to one another and conclude that the relative part/region indicators in Kadorih are distinct from the relative orientation indicators. Moreover, I will show that each exophoric demonstrative in Kadorih is used depending on the degree of distance and visibility of the referents.

1. Introduction

The aim of this paper is to describe the system of spatial reference in Kadorih by illustrating spatial indicators and by discussing their semantics. Kadorih is a dialect of Dohoi (or Ot Danum), an Austronesian language belonging to the West Barito subgroup of Malayo-Polynesian languages. It is spoken by approximately 11,000 people in the upper reaches of Kahayan River in Central Kalimantan, Indonesia. Spatial reference systems in Barito languages have hardly been discussed to date. This paper investigates the spatial reference system in one of the languages.

This paper has three main sections, that is, section 2 deals with relative part/region, section 3 with relative orientation, and section 4, with exophoric demonstratives.

Words in the class of ‘relative part/region’ denote delimited portions of objects, while those in the class of ‘relative orientation’ denote spatial orientation. On the other hand, exophoric demonstratives have deictic meanings, and words in this class imply locations and/or visibilities of things within relevant deictic dimensions.

The language name Ot danum [waterhead water/river] ‘head waters’ is an example of a relative part, that is, ot ‘source (of a stream)’ is part of a river. In Kadorih, body-part terms (e.g. ‘mouth’, ‘back (anat.)’) and relational nouns (e.g. ‘inside’, ‘end/tip’) are commonly used in order to express an intrinsic part or the relative region of an object. In contrast, in order to express relative orientation, adjectives, relational nouns, prepositions, and verbs can be used. There are four orientational parameters in Kadorih: upstream-downstream, upland-downland, up-down, and right-left.

This paper mainly discusses the properties of the exophoric demonstratives in Kadorih. Proximal ih- ‘this’ and distal a- ‘that’ are used to refer to objects only within immediate sight or reach. However, when referring to objects or locations out of sight or reach, locational demonstratives must be used instead.

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1 The dialect name Kadorih or Kodorih ‘like that’ is in itself a kind of manner demonstrative with anaphoric function.

2. Relative parts or regions

In Kadorih, body-part terms or relational nouns are used to denote delimited portions of an object. These spatial indicators of relative parts or regions are crucial to understand how Kadorih people organize their space.

In Kadorih, possessive constructions are frequently used to express the relative parts or regions of an object. There exists no inalienable vs. alienable grammatical distinction, so that there is only one type of encoding for possessive constructions. A spatial indicator of relative parts or regions usually occurs in the possessee slot within a noun phrase as shown in (1a). The juxtaposed noun construction in (1a) consists of a possessee and a possessor, whereas that in (1b) consists of a noun and an attribute.

(1) a. possessee: lihkut sahapk [back(anat.) thigh] ‘the back part of a thigh’
   b. attribute: sahapk lihkut [thigh back(anat.)] ‘hind legs of quadrupeds’

The phrase in (1a) is an example of a noun phrase in which both the possessee (lihkut) and the possessor (sahpak) are explicitly encoded. However, especially in indefinite or generic referring expressions in which referents are not uniquely identified, possessors may not necessarily be expressed when they are contextually accessible.

Relative part/region indicators themselves cannot occur in the possessor slot but in the attribute slot within a noun phrase as shown in (1b). The phrase sahapk lihkut in (1b) is not an expression which refers to the part of thigh, but rather it is a technical term referring to a particular body part of animals.

2.1 Body-part terms

According to Svorou (1993: 70–89, 249–252), the spatial relation of ‘FRONT-REGION’ in languages of the world tends to be synchronically and diachronically derived from body-part terms such as ‘face, mouth, breast/chest, forehead, eye, head’, while ‘BACK-REGION’ spatial relation tends to come from terms for ‘back, buttocks/bottom, anus, loin, bone’.

In Kadorih, FRONT-REGION and BACK-REGION can be denoted by bau ‘mouth’ and lihkut ‘back (anat.)’ respectively.

(2) a. bau-n        lohpou
    mouth-LINK    house
    ‘the entrance of a house’ or ‘the front region of a house’

   b. bau-n    tukang lohpou
    mouth-LINK entrance house
    ‘the entrance of a house’

The phrase baun lohpou in (2a) can mean both ‘the mouth (=entrance) of a house’ and ‘the front region of a house (i.e. the region on the side closer to the street)’ depending on the context in which it occurs. On the other hand, baun tukang lohpou in (2b) always means ‘the entrance of a house’. Therefore, baun tukang lohpou is significantly better defined than baun lohpou. In addition, another better defined term husuk (lohpou) [surface (house)] for ‘the front region (only for houses)’ will be used in order to

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2 Body-part terms for ‘face’ (mahta bau), ‘breast/chest’ (tusu/usuk), ‘forehead’ (likou), ‘eye’ (mahta), ‘head’ (kuhung), ‘buttocks’ (puhpah), ‘anus’ (luwang pulus), ‘loin’ (kahang), ‘bone’ (tulang) are not commonly used to denote FRONT and BACK.
disambiguate polysemous baun lohpou independently of the context of speech. The notion ‘FRONT’ denoted by bau is only a small part of its meaning.

The blade or edge of knives can be indicated by bau ‘mouth’ in contrast to lihkut ‘back (anat.)’ which indicates the spine part of knives. However, these spatial indicators no longer denote the REGION near a knife, but rather the intrinsic PART of a knife.

<table>
<thead>
<tr>
<th>PART</th>
<th>Baun</th>
<th>Lihkut</th>
</tr>
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<tbody>
<tr>
<td>a.</td>
<td>bau-n pisou</td>
<td>[mouth-LINK chopper]</td>
</tr>
<tr>
<td>b.</td>
<td>lihkut pisou</td>
<td>[back chopper]</td>
</tr>
<tr>
<td>c.</td>
<td>*bau-n kahtam</td>
<td>[mouth-LINK plane(tool)]</td>
</tr>
<tr>
<td>d.</td>
<td>*bau-n otak</td>
<td>[mouth-LINK adze]</td>
</tr>
<tr>
<td>e.</td>
<td>jola pisou/kahtam/otak</td>
<td>[tongue chopper/plane/adze]</td>
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</table>

Of edged tools, only knives have the bau-part in their body. Bau cannot be used for the blade or edge of planes or adzes (=3c, 3d). This is because only knives have a spine that is long enough to fit the lihkut metaphor (=3b). However, there is a better defined term jola ‘tongue’ to refer to the blade parts of these tools (=3d).

Any objects with a large enough surface can possess metaphorical lihkut as their BACK-PART. For instance, it is completely natural to say lihkut talawang [back shield] ‘the back of a shield’ and baun talawang ‘the front of a shield’.

Furthermore, lihkut can be construed on the basis of the proper placement of a human body in relation to an object such as a garment or a vehicle. It is interesting to note that the FRONT-PART of clothes or vehicles can be expressed by bau even though clothes and vehicles have a ‘mouth’ which connects the interior with exterior of these objects.

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<th>PART</th>
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<tbody>
<tr>
<td>a.</td>
<td>bau-n kalambi</td>
<td>[mouth-LINK shirt]</td>
</tr>
<tr>
<td></td>
<td>lihkut kalambi</td>
<td>[back shirt]</td>
</tr>
<tr>
<td>b.</td>
<td>bau-n salawar</td>
<td>[mouth-LINK trousers]</td>
</tr>
<tr>
<td></td>
<td>lihkut salawar</td>
<td>[back trousers]</td>
</tr>
<tr>
<td>c.</td>
<td>amun tomasang umba jo bau-n nokuh hila lihkut,</td>
<td></td>
</tr>
<tr>
<td>TOP</td>
<td>be.put.on with REL</td>
<td>mouth-LINK toward direction back</td>
</tr>
<tr>
<td></td>
<td>‘If it (=garment) is put on backwards,’</td>
<td></td>
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</tbody>
</table>

The front and back of a car are usually indicated by bau and lihkut respectively, but front and back of a boat must be expressed by the conventionalized technical terms urung ‘nose’ and lai ‘end’ respectively as in (5c).

The back-part or region of kursi ‘chair’ is also fixed relative to the proper placement of human body (or based on the large enough surface for its ‘back’). This is the reason why the baun kursi ‘in front of a chair, the front part of a chair’ must be the opposite

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3 The FRONT- and BACK-PART of a boat are determined on the basis of the shape of a boat. On the other hand, the parts of a raft (lating) are defined by the direction of the flow. The FRONT-PART of a raft is the upstream side and the BACK-PART of it is the downstream side.
side to its BACK-PART or REGION. In Kadorih, the FRONT-PART or REGION of an object is frequently recognized depending on its BACK-PART or REGION.

(6) If an object has a FRONT, then it is the direct opposite side of a well-defined BACK of the object.

The phrase *lihkut balanga* in (7a) can become well-defined if *balanga* is placed near a wall-like object. For instance, if *balanga* is placed at 30cm distance from a wall, the space between the wall and *balanga*, or its own part facing the wall can be referred to as its BACK-PART or REGION (=7a), and the side opposite to the back can be regarded as the FRONT-PART or REGION (=7b). In contrast, if *balanga* is placed in the center of a room far enough away from the walls, it turns out not to have a BACK-PART or REGION, and consequently no specific space can be regarded as its FRONT REGION. In this situation, the phrase *bau balanga* in (7b) would only refer to the mouth of the cooking pot.

(7) a. *lihkut balanga* [back cooking.pot] ‘back part or region of a cooking pot’
   b. *bau-n balanga* [mouth-link cooking.pot] ‘front part or region of a cooking pot’
      or ‘the mouth of a cooking pot’

As is often the case, spatial expressions in Kadorih are directly translated into Indonesian even though Indonesian does not have exactly the same spatial reference system as Kadorih, as in the following example.

(8) *Hutan ini sangat menyeramkan, letaknya di udik sungai Suling; di belakang kampung Pongondian dan Kosondihan Tanah Kayangan.*

‘This forest was quite terrifying, located in the upper reaches of Suling river, at the back of Pongondian and Kosondihan village of the Kayangan region’(Ceritera Rakyat Daerah Kalimantan Tengah 1979, ch.4, p.31)

The phrase *di belakang kampung Pongondian*... in Indonesian corresponds to or overlaps with the phrase *aang lihkut lowu Pongondian*... [at/in/on back village PLN...] ‘at the upland area outside the villages Pongondian...’ in Kadorih, which means more than just *di belakang kampung* ‘at the back of villages’. See section 3.2 for more details on ‘upland’.

In sum, the general conventions in Kadorih for expressing FRONT and BACK by means of body-part terms are as follows.

(9) a. Of body-part terms in Kadorih, only *bau* ‘mouth’ and *lihkut* ‘back (anat.)’ can frequently be used to motivate spatial construals of front and back parts or regions.
   b. Synchronically, there are polysemy of part and region in the meanings of *bau* and *lihkut* respectively.
   c. The construal of front-region is, in many cases, marked in that it will be only determined if the existence of back-part or region of an object is well-defined.

The other spatial indicators of body-part terms are *balihkat* ‘side of the body’ (=10a) and *pasihku* ‘corner’ (from *sihku* ‘elbow’). The meaning of *balihkat* is particularly marked since it depends on the well-defined FRONT and BACK-PART or REGION of an object. The phrase *balihkat termos* [side thermos] in (10b) will be construed in the same way as *lihkut bau balanga* in (7).
2.2 Relational nouns

Relational nouns usually occur in the possessee slot within a possessive construction as shown in (11a). As is the case with body-part terms described in the previous subsection, they can also occur in the attribute slot within a noun phrase as in (11b). Whereas the noun phrase tohun iking in (11a) denotes the part of a finger, iking tohun in (11b) denotes one of the parts of a hand.

Entities which can be visually perceived (and conceptualized) have spatial characteristics such as shape, size, and positional information. Many of these spatial characteristics of, in particular, inanimate entities in Kadorih are usually encoded by means of relational nouns. The ‘tip/blade’, ‘center’, and ‘root’ of tongue are, for example, expressed respectively by lai-n jola [tip/end-link tongue] or tapahkan jola [tip/end tongue], behteng jola [middle tongue], and puu-n jola [base-link tongue]. Here, lai ‘tip/end’, tapahkan ‘tip/end’, behteng ‘middle’, and puu ‘base’ are all relational nouns.

The first one is ‘end/tip’ which is indicated by tapahkan (or topahkan) as in (12).

(12) harun=to nohtok tapahkan sarupih jo=hinda urung=ah=rih.
    newly=1PL.IN cut.off end/tip (boat)plank REL=part/side nose=3sg.POSS=ANAPH
    ‘Now we cut off the front end of that boat plank.’

The word lai and tapahkan both indicate the tip/end-part of an object, but they must be used only when there exists a well-defined ‘base’ for the object. For instance, balou ‘hair’ and kacu ‘wood’ in lai-n balou [tip/end-link hair] ‘the tip of a hair’ and lai-n kacu [tip/end-link wood] ‘the tip of a tree’ have their base (puu ‘base, root’). The difference between lai and tapahkan is that lai implies the existence of the ‘base’-part, while tapahkan does not. Moreover, lai can be replaced by tapahkan, but the opposite is not always true. Thus, tapahkan is a more neutral or unmarked relational noun than lai.

‘Planted’ objects have their bases that come into contact with the ‘ground’. Accordingly, entities such as hair, tree, liana, pillar, and even finger, thigh, ear, ladder, hill and mountain, can be construed as having a puu ‘base, root’, so that they can have a lai-part as their intrinsic part.

There are two different words which indicate ‘side’: a relational noun saran ‘(be)side, edge’ and a body-part term balihkat ‘side’. The sentences in (13) describe some of the differences between these words.

(13)

a. ya=taa-i, ahku nyuhu=ko ngomin ahka-k=ku termos
   NEG=know-3SG I request=you bring for-me=me thermos
   ‘aang balihkat dinding atuh’, eam, ‘aang saran dinding atuh’.
   at/in/on side wall that NEG at/in/on beside wall that
‘It is impossible that I ask you to bring me the thermos (being inside the house) “at the side of the wall”, no, (what exactly is) “beside the wall”.

b. amun unuk=ku, eam aang saran karahtak, 
TOP place=my NEG at/in/on beside road

tahpi aang balihkat=ndai, mahcu isut,
but at/in/on side=PFV far a.little

‘As for my house, (it is) not (built) beside the road, rather, (built) at the side of the road, (it is built) a little way off (the road).’

(13a) says that the notion of ‘beside the inner wall’ cannot indicated by balihkat dinding and that, on the contrary, it is indicated by saran dinding. In fact, balihkat lohpou [side house] refers to ‘the outer wall’ or ‘space near the house’. (13b) says that balihkat karahtak denotes the space at a little distance away from the road, while saran karahtak denotes the space just beside the road. Taking into account also the discussion about the examples in (12) above, there are at least two differences between them: (i) balihkat ‘side’ is construed relative to a bodied object, but saran ‘beside’ is not; (ii) balihkat covers a larger region than saran does.

There is no relational noun for ‘outside’ in Kadorih other than luar ‘outside’, a loanword from Indonesian. The issue of why Kadorih has no word for ‘outside’ will require a detailed survey, but one of the possible reasons may be that there are some relative region indicators (e.g. balihkat ‘side’ and lihkut ‘back’) which already have the outside regions of objects in their scope.

Interestingly, in contrast, there are two relational nouns for ‘inside’ in Kadorih, luwang in (14) and huang in (15).

(14)luwang ‘inside’

a. ihto aang luwang lohpou. 
1PL.IN at/in/on inside house
‘We are inside a house.’

b. io ngoni-u nokuh luwang alut. 
3SG bring-3OBJ toward inside boat
‘He brought it inside a boat.’

c. io baas ngomin ngomin luhku tahkan luwang salehpang=ah. 
3SG strong take take cigarette from inside pocket=3SG.POSS
‘He, habitually steals/takes cigarettes from his pocket.’

(15)huang ‘inside, intend to’

a. ukur io tame tame nokuh huang. 
so.as.to 3SG go.into go.into toward inside
‘So that it (=putty for filling) may go inside.’

b. io huang buli tanggal duo pulu. 
3SG intend.to return date two ten
‘He is going to go home on the 20th (of this month)’

Luwang can be combined with different prepositions which indicate location or direction: with aang ‘at/in/on’ in (14a), nokuh ‘to(ward)’ in (14b), and tahkan ‘from’ in
(14c). On the other hand, huang is less frequent, and as shown in (15b), it is used more generally as a modal auxiliary.

The next pair of relational nouns is bumbung ‘top/peak’ and puhkang ‘bottom’.

(16)a. ihto jadi aang bumbung=ndai.  
1PL.IN PF at/in/on top/peak=PFV  
‘We have been at the top (of the mountain).’

b. lacat palanduk ngadiling puhkang=ah.  
strayed mouse-deer circle bottom=3SG.POSS  
‘The mouse-deer strayed and twirled around at the bottom of it (=huge pannier).’

Whereas another word for ‘peak’, pupung, is only used for mountains, bumbung in (16a) also refers to the top-part of other objects, for example, bumbung ahpui ‘the tip of the flame’.

3. Relative orientation

Relative orientation indicators are semantically and morpho-syntactically different from the relative part/region indicators described in section 2. Spatial indicators of relative orientation such as juoi ‘upstream’, diang ‘upland’, kotouu ‘right’ or kamuloi (or komuloi) ‘left’ cannot denote parts of objects but only denote regions or directions relative to objects. In contrast, the relative part/region indicators themselves cannot denote directions without being combined with the word hila ‘direction/region’. The example in (4c) is repeated in (17).

(17) amun tomasang umba jo bau-n nokuhi hila lihkut,  
top be.put.on with REL mouth-LINK toward direction/region back  
‘If it (=garment) is put on backwards,’

In this sentence, the relative part/region indicators bau and lihkut function differently. Bau only refers to the part (of garment), while the phrase hila lihkut ‘backwards’ can refer to the direction (relative to the body) because the word hila contributes to a relative part/region indicator denoting the orientation relative to an object.

There is a pair of hila phrases showing the direction of the sun, as shown in (18).

(18)a. hila pomolum  
hila direction/region pVN-polum  
‘(the direction of) sunrise’

b. hila pomolop  
hila direction/region pVN-polop  
‘(the direction of) sunset’

However, these phrases are mainly used when working the field or finding one’s way in the jungle. For instance, vines or lianas such as long beans put forth their buds, start to coil around tree trunks and finally climb up after finding sunshine. Based on this knowledge or the sun/shadow direction, Kadorih people plant vegetables in the field or orient themselves when wandering in the jungle.

Hila is polysemous in that it refers to both direction and region. Because of this polysemy, it may function as a locative preposition which contrasts with a dedicated locative preposition aang ‘at/in/on’, as explained by my consultant (=19).
It can be said as both “aang” and “hila”. So, they are often the same. It can be said, “the waterhead of Kahayan river ends at the direction of (=hila) Mt. Komiting”. [...] In fact, it is not the direction. [...] It would be best to say, “ends at (=aang) Mt. Komiting”. However, people sometimes say “hila (=at the direction of) Komiting’.

The relative orientation indicator hila is synchronically related to the relative part/region indicator sila ‘side’. It is completely natural to say sila pomolum ‘(the side of) sunrise’ and sila pomolop ‘(the side of) sunset’ instead of the phrases in (18).

3.1 Upstream and downstream

Unlike sailing in the ocean, traveling on land or along rivers involves a rich variety of landscape features to recognize locations, directions or trajectories. Kadorih is spoken in landlocked areas of Borneo, and people travel only on land or along rivers. The navigation terms for locating positions in Kadorih are land-based.

One of the most frequent directional axes in Kadorih is upstream versus downstream. In daily life, whenever Kadorih people see anyone walking outside a house, they usually greet the person in reference to the upstream-downstream axis as demonstrated in (20).

(20) A:  
\[ ku=moh \]  
\[ ko=rih? \]  
(=no)kuh (a)moh (ih)ko rih?)  
\[ \text{toward=where you=ANAPH} \]  
\[ \text{‘Where are you going?’} \]

B:  
\[ ku=juoi. \]  
\[ ku=booi. \]  
\[ \text{toward=upstream or toward=downstream} \]  
\[ \text{‘Going upstream.’ or ‘Going downstream.’} \]

There are deictic motion verbs murik ‘to go upstream (by boats, cars, airplanes, etc.)’ and sohu ‘to go downstream’ which semantically correspond to juoi ‘upstream’ and booi ‘downstream’ respectively. However, these deictic motion verbs cannot be the answers to A’s question in (20) if B will move just within the village or move far away to another river area. In the case of leaving the river far behind, bolua ‘to go out’, soluka ‘to go out the area’, or nyoa ‘to cross over a drainage divide’ must be used.

The relative orientation indicators juoi ‘upriver’ and booi ‘downriver’ cannot denote a PART of some region or area, but only a REGION or DIRECTION relative to objects. Because of this semantic restriction, they cannot occur in the possessee slot.
(21a). \textit{aang [NP Kahacan juoi]} \\
\textit{at/in/on RIVER.NAME upstream} \\
‘in the upper reaches of the Kahayan River’
\textit{a’}. *\textit{aang [NP juoi Kahacan]}

\textit{b. aang [NP juoi ibukota Kabupaten]} \\
\textit{at/in/on upstream capital.city regency} \\
‘(along the Kahayan River) above the capital city of the regency’
\textit{b’}. *\textit{aang [NP juoi Kabupaten]}

In (21a), \textit{juoi} does not function as the possessor of \textit{Kahacan} ‘(river name)’ but as the attribute of \textit{Kahacan}.

In (21a’), on the other hand, the phrase *\textit{juoi Kahacan} is ungrammatical. The slot where \textit{Kahacan} occurs may be analyzed as the possessor or attribute slot. Although rivers can actually be regarded as having the upstream as their intrinsic part, \textit{juoi} cannot be grammatically possessed by \textit{Kahacan}. Moreover, the word \textit{juoi} cannot be modified by \textit{Kahacan} (=the point of reference).

In (21b), the noun phrase \textit{juoi ibukota Kabupaten} is completely grammatical because \textit{juoi} functions as the head of this phrase and denotes the upstream \textit{REGION} relative to the reference point indicated by the attribute \textit{ibukota Kabupaten} ‘the capital city of the regency’.

In (21b’), on the other hand, the area of \textit{Kabupaten} is too big to be recognized as a reference point and therefore cannot modify the head \textit{juoi}. And again, although \textit{Kabupaten} actually can be regarded as having the upstream region as its intrinsic part, \textit{juoi} cannot be grammatically possessed by it.

In (21), \textit{juoi} syntactically behaves like a noun. It should be noted that, unlike relative part/region indicators, relative orientation indicators such as \textit{juoi} and \textit{booi} ‘downstream’ show the same morphological distribution as adjectives. They can be prefixed by \textit{poko- [SUPER]} or \textit{toko- [SUPER]} to yield the superlative forms, as in (22).

(22) \textit{amun lohpou Tarisman topahkan=nai, topahkan lowu. \textquoteleft amoh unuk TOP house PSN end/tip=there end/tip village where place

\textit{Tarisman mohon?\textquoteright, \textquoteleft poko-juoi=nai, io orih lohpou ijo PSN live SUPER-JUOI=there 3SG ANAPH house REL

\textit{poko-juoi=nai\textquoteright}, atawa \textquoteleft toko-juoi\textquoteright, atawa \textquoteleft paling juoi\textquoteright
SUPER-JUOI=there or SUPER-JUOI or SUPER JUOI

hion ulun.
QUOT people
‘Tarisman’s house is at the end of the village. (If we ask) \textquoteleft where does Tarisman live?\textquoteright, people will answer \textquoteleft the most (=poko) upstream one, it is the most (=poko) upstream house’, \textquoteleft the most (=toko) upstream one’, or \textquoteleft the most (=paling) upstream one’.’

On the other hand, relative part/region indicators such as \textit{topahkan} in (22) do not occur with these superlative prefixes.
3.2 Up and down

The other directional axes in Kadorih are upland versus downland and up versus down.

(23) a. diang ‘(elevation) upland, upward, over, above’
   b. polih ‘(elevation) downland, downward’
   c. isung ‘(vertical) on, up, above, high’
   d. pinda ‘(vertical) under, down, beneath, below, low’, and ‘(elevation) downland’

Pinda (=23d) is polysemous in that it may replace polih (=23b) without changing the meaning of a sentence. In contrast, the word polih cannot always replace pinda. Thus, polih lohpou ‘downland direction or region outside a house’ can be replaced by pinda lohpou ‘under (or downland) a house’ but not vice versa.

Villages in the upper reaches of Kahayan River are located along the river. In a village, polih, pinda and diang indicate the directions or regions relative to the river as shown in (24). Any location in a village can be described by means of upstream-downstream and upland-downland axes.

(24) ‘Upland’ and ‘downland’ in a village
   a. diang ‘in the opposite direction of the river’ (= upland)
   b. polih/pinda ‘in the direction of the river’ (= downland)

It should be noted that, in a village, lower-altitude regions can still be described as diang as long as they are located away from the river, and higher-altitude regions can still be regarded as polih/pinda as long as they are located nearer the river.

Houses in a village must be built facing the road, in other words, the front or door of a house faces the road. In addition, houses are basically built facing the river, so that the forward direction of a house is usually polih/pinda and backward one is diang. The back of a house can then be generalized as indicating the back of the village. Therefore, lihkut lowu ‘the back of a village’ can denote the upland area outside a village just as diang lowu ‘upland direction/region outside village’ does.

Under a broader view of the relation between referents and reference points, diang is distinct from isung in terms of the elevation/vertical dimension.

(25) a. mahtan ondou=nai hila diang lowu=ndai, diang=ndai.
      sun=there direction/region upland village=PFV upland=PFV
      ‘The sun is already going down in upland direction.’

   b. tohun ondou, pas isung lowu.
      center day exact above village
      ‘In the daytime, (the sun is) right above the village.’

In contrast, under a smaller view, diang is distinct from isung in terms of whether referents are located in contact with reference points as shown in (26).
INAGAKI: The system of spatial reference in Kadorih

I

1. The system of spatial reference in Kadorih

a. **diang sahpou** [above roof] ‘above a roof’

b. **isung sahpou** [on roof] ‘on a roof’

c. **diang kursi** [above chair] ‘above a chair’

d. **isung kursi** [on chair] ‘on a chair’

4. Exophoric demonstratives

Kadorih exophoric (or spatial) demonstratives indicate two-way distance contrast, that is, proximal versus distal system which basically distinguishes two physical domains in relation to the position of the speaker.

There are exophoric demonstratives for **THING**, **FOCUSED THING** and **MANNER**, which are semantically and formally related each other. All exophoric demonstratives have a string **tuh** as their final syllable. Among them, proximal demonstratives are characterized to have a string **ih** (**ihtuh** ‘this’, **jihtuh** ‘this (not the other)’ and **kolihtuh** ‘like this’) whereas distal demonstratives contain **a** (**atuh** ‘that’, **jatuh** ‘that (not the other)’ and **kolatuh** ‘like that’). In addition, Kadorih also has nonspatial (or anaphoric) demonstratives for **THING**, **FOCUSED THING** and **MANNER** such as **orih** ‘that’, **jorih** ‘that (not the other)’ and **kodorih** ‘like that’.

**THING** demonstratives are formally unmarked, **FOCUSED THING** demonstratives are characterized to have **j** (**jihtuh**, **jatuh** and **jorih** are contracted forms of **ijo** [relativizer] + **ihtuh/atuh/orih**), and **MANNER** demonstratives have **kol** or **kod** (**kolihtuh**, **kolatuh** and **kodorih** are contracted forms of **kolou** ‘like’ + **ihtuh/atuh/orih**).

Table 1 shows the paradigm of demonstratives in Kadorih.

<table>
<thead>
<tr>
<th></th>
<th>spatial (+tuh)</th>
<th>nonspatial (+orih)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THING</strong></td>
<td><strong>ihtuh</strong></td>
<td><strong>atuh</strong> (ihi)</td>
</tr>
<tr>
<td><strong>FOCUSED THING</strong></td>
<td><strong>jihtuh</strong></td>
<td><strong>jatuh</strong> (jihi)</td>
</tr>
<tr>
<td><strong>MANNER</strong></td>
<td><strong>kolihtuh</strong></td>
<td><strong>kolatuh</strong></td>
</tr>
</tbody>
</table>

Table 1. Demonstratives in Kadorih

In Kadorih, the concept ‘distance’ is necessary to distinguish proximal and distal demonstratives. On the other hand, the concept of ‘height’ has nothing to do with the paradigm or uses of exophoric demonstratives.

4.1 Thing

Things within immediate sight or reach can be encoded by spatial or exophoric demonstratives (**jihtuh** or **jatuh**). On the other hand, the nonspatial demonstrative (**jorih** is basically used to pick out something previously mentioned in a context (=anaphoric use). Moreover, it is used for situations which resulted in successful (=27) or for memory-tracking (=28). (27) shows the examples of situations and each acceptability of the demonstratives for **THING**. Each sentence in (27) consists of a demonstrative and the 3rd person singular pronoun **io** which refers to a situation at hand.

(26)a. **diang sahpou** [above roof] ‘above a roof’

b. **isung sahpou** [on roof] ‘on a roof’

c. **diang kursi** [above chair] ‘above a chair’

d. **isung kursi** [on chair] ‘on a chair’
In such situations, an ideal outcome for the speaker (27a: activation of the equipment, 27b: completion of preparation for sewing, 27c: achievement of the previous stage to pull the fish) must be referred to by nonspatial demonstratives orih. In contrast, ideal outcomes cannot be referred to by spatial demonstratives since they exist just in speakers’ minds, not in immediate sight or reach.

The utterance in (28) is an example of memory-tracking.

(28) “(j)orih nih=poh, jo=tohko musik aang anan=nih,
     (FOC)ANAPH PTCL=PTCL REL=there.be music at/in/on DEM.LOC=PTCL

    inon ara-i=nih?”
    what name-3SG.POSS=PTCL

‘That one, the one having music inside there, what’s the name?’

If the speaker of this sentence says “ihtuh nih poh” or “atuh nih poh” instead of “(j)orih nih poh” in (28), then there must be the thing in question in the immediate sight or reach of the speaker.

Spatial demonstratives for THING give information about the locations of things relative to the deictic center. There are three main locations when answering to a person who asked to show or give something.

(29) answer implies
    a. “tuh” the speaker is holding it in his or her hand
    b. “ihtuh” the speaker is not holding it, but pointing it while it is at arm’s length
    c. “atuh” the speaker is not holding it, but pointing it from a distance

If the thing in question is invisible, for example, it is behind the speaker’s back, the use of spatial demonstratives depends on the speaker’s state of knowledge. If the speaker does not know where the thing is located, then he or she cannot use spatial demonstratives (j)ihtuh or (j)atuh. In contrast, if the speaker knows that the thing is located behind his or her own back, then he or she can point to it saying “(j)ihtuh” [(FOC-)this]. In addition, if the speaker knows the thing is located behind the addressee’s back, then he or she can point to it saying “atuh, aang anan” [that, at/in/on DEM.LOC].

4.2 Location

Whereas things in immediate sight are encoded by the THING demonstratives (j)ihtuh and (j)atuh as described in section 4.1, things out of immediate sight are encoded by means of locational demonstratives ohtoi ‘here’, ahi ‘there (far)’, anai ‘there (far afield)’ and anan ‘there’. Locational demonstratives do not behave syntactically like adverbs, but like locational nouns, they occur after prepositions such as aang ‘at/in/on’, nokuh ‘to(ward)’ or takhan ‘from’, as well as in the attribute slot of a noun phrase (but not in the possesssee slot).

The distal demonstrative for THING atuh cannot be used to refer to the house out of immediate sight as in the situation depicted in (30).
When referring to Tarisman’s house which is located about 50 meters away
a. *atu hu [that]
b. lohpou aang ahi [house at/in/on there.far]
c. lohpou aang anai [house at/in/on there.far.afield]

Such a house out of immediate sight is usually referred to by means of the construction of [house + at/in/on + locational demonstrative] as shown in (30b, c). It should be noted that locational demonstratives themselves cannot directly indicate things (e.g. boat, house, or village) because their essential function is not to refer to a thing, but to refer to a location.

The distinction between ‘spatial’ and ‘nonspatial’ among demonstratives shown in Table 1 also holds for locational demonstratives. Whereas ohtoi, ahi and anai are always used as spatial demonstratives, anan is basically nonspatial, but can still refer to a spatial location. Moreover, ‘visibility’ may be indirectly related to this spatial vs. nonspatial contrast in LOCATION demonstratives, and it is also important to understand individual uses of demonstratives in Kadorih.

If the thing in question is out of the immediate sight of the speaker but only the speaker knows that the thing is near the deictic center, then aang anan is frequently used to refer to the thing in question.

(31) “yo, ihko ngomi-u aang anan”. OK you bring-3OBJ at/in/on DEM.LOC
‘OK, get it (=knife) from there (=the back kitchen).’

However, native speakers’ intuition about the demonstratives for LOCATION tends to be based only on the distance from the speaker (not from the addressee). According to this intuition, locational demonstratives can also be glossed as ohtoi [here], anan [there.near], ahi [there.far], and anai [there.far.afield]. The distance between the location referred to and the speaker is more relevant to the choice of a locational demonstrative.

(32)a. nain=ku nokuh anan. late r=I toward DEM.LOC
‘Later, I will go there.’

b. (koro sombang aang) unuk=mu ahi=ih. we.two meet at/in/on place=your there.far=just
‘(Let’s meet) just at your house away from here.’

The sentence in (32a) can mean ‘later, I will come to your house’ (via phone conversation). Thus, both anan in (32a) and ahi in (32b) can be used to refer to the addressee’s house. Both (32a) and (32b) can be uttered at a little or large distance from the addressee. Therefore, the occurrence of a locational demonstrative is not restricted by the distance between the location referred to and the addressee, but by the distance between that location and the speaker.

5. Conclusion

This paper exploited the core part of the spatial reference system in Kadorih by describing spatial indicators such as relative part or region, relative orientation, and exophoric demonstratives. For our understanding of the organization of space in an individual language, it is important to recognize how relative part, region and direction are related to one another. In Kadorih, the relative part/region indicators are distinct,
both semantically and morpho-syntactically, from the relative orientation indicators. In the description of exophoric demonstratives, it was clarified that referents within or outside of one’s immediate sight or reach (that is to say, referents with different degree of visibility or distance) must be encoded differently in Kadorih.

References
