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Restrictions on the Usage of Spatial Frames of Reference in Location and Orientation Descriptions: Evidence from Three Australian Languages

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Spatial Frames of Reference (FoR) have been discussed from different angles including cross-linguistic variety, detailed individual language descriptions, considering the impact of landscape and cognition, and regional overviews. Little attention, however, has been paid to their usage patterns. Consequently, this paper analyses a curious restriction on the use of different types of absolute terms. The analysis is based on a previous observation for Jaminjung that the use of absolute FoR is conditioned by whether or not the ground is overtly specified. The paper expands on this finding for two languages spoken in the same region, MalakMalak and the Roper variety of Kriol. It particularly focuses on the influence of morphosyntactic features and takes cognitive approaches as well as cultural salience into consideration.

Keywords: Spatial Frames of Reference; Usage-based Approaches; Australian Indigenous Languages; Jaminjung; MalakMalak; Kriol

1. Introduction

Different aspects of spatial Frames of Reference (FoR) have been analyzed in detail since the early 1990s. Researchers have studied cross-linguistic variety (Levinson 1996; Levinson & Wilkins 2006b; Pederson *et al.* 1998; Li & Gleitman 2002), given detailed accounts of individual languages (François 2003; Haviland 1993; Hoffmann 2011; Schultze-Berndt 2006), considered the impact of landscape and cognition on FoR (Bohnemeyer & O'Meara 2012; Danziger 2010; Levinson 2003, 2008; Palmer

2015), and provided regional overviews (Bohnemeyer 2013; François 2004, 2015; Hoffmann 2017).

A variety of classifications were put forward for FoR. The most influential, and the one used mainly in this paper, distinguishes three types, namely intrinsic, relative and absolute (Levinson 2003; Pederson *et al.* 1998). Intrinsic FoR involves an object-centred coordinate system based on the inherent features of the ground (e.g. *the tree is in front of the house* and example (2a)). Relative FoR features a coordinate system centred on the main axis of the speaker's body (e.g. *the tree is to the left of the house (from the speaker's perspective*) and example (2b)). Absolute FoR includes horizontal and vertical fixed or abstracted directions that may be based on geographical features (e.g. *the tree is east/uphill of the house* and examples (2d) and (2e)). Intrinsic FoR is binary in the sense that the anchor, i.e. the place from which the projected angle is calculated, is *within* the ground and allocentric. Relative and absolute FoR on the other hand are ternary where the projected angle is *outside* the ground, and in the body of the viewer/speaker (egocentric) or an environmental feature or entity (allocentric) (Hoffmann 2011: 85).

Danziger (2010) proposes adding a fourth type, direct FoR incorporating deixis. In this FoR, speaker and ground coincide (e.g. *the tree is in front of me* and example (2c)). This addition is justified with the observation that distinguishing between the speaker *inside* and *outside* the ground adds another binary (egocentric) relation and completes the logical four-way FoR distinction between two binary and two ternary as well as two egocentric and two allocentric relations (Danziger 2010: 172–174).

Moreover, Terrill and Burenhult (2008) introduce the notion of 'Orientation' where a figure's features are *oriented* rather than *located* with respect to a ground (e.g. *the house faces the tree* and examples (2f) and (2g)). This approach was introduced to operate as a type of spatial language operating independently of Frames of Reference. However, under Bohnemeyer and O'Meara's (2012) analysis, Orientation *relies* on all FoR except for intrinsic. The latter approach is adopted for this analysis.

A few studies (e.g. Meakins 2011; Schultze-Berndt 2006) have pointed out that the usage of different FoR within one language is dependent on scale, where large-scale descriptions might utilize absolute terms, while small-scale (table top) is reserved for intrinsic descriptions. For example, in English, it is acceptable to say example (1a), but example (1b) is much less acceptable.

(1)   a.   Go two blocks east, then head north.
         b.   #The cup is east of the saucer.

However, usage restrictions within individual languages' absolute FoR system(s) alone have only sparsely been discussed in earlier work. McGregor argues for Gooniyandi (Kimberley, Western Australia) (2008, 2009) and Shua (Khoe, Botswana) (2016) that choice of different absolute FoR is not governed by scale or other predictable patterns.

As a result, the aim of this paper is to describe and analyze usage restrictions of absolute terms in various contexts for three Australian languages: Jaminjung, Kriol and MalakMalak. For some languages in location descriptions absolute FoR may not allow overt specification of ground. Furthermore, some absolute systems may be restricted to contexts where a figure is oriented rather than located with respect to a ground.

The paper is structured as follows: after briefly introducing Jaminjung, Kriol and MalakMalak in Section 1.1, I provide a short overview of previous studies into FoR (Section 1.2) and the methodology used in this paper (Section 1.3). Following this, in Section 2 intrinsic (Section 2.1) and relative (Section 2.2) FoR are introduced. Absolute FoR systems, their usage restrictions and morphosyntactic features are discussed in detail in Section 2.3 for the three languages. In Section 3 cognitive approaches (Section 3.1) including boundedness (Section 3.2.1) and geomorphic vs. landmark-based types of absolute terms (Section 3.2.2) are discussed in detail. Cultural salience is examined lastly in relation to usage restrictions (Section 3.3). Finally, Section 4 concludes the paper and summarizes all results and analyses.

1.1. The Languages

Jaminjung is a non-Pama-Nyungan Western Mirndi language spoken in the Victoria River area of Northern Australia. Today, only a few dozen elderly speakers remain (Schultze-Berndt 2012). MalakMalak is a non-Pama-Nyungan Northern Daly language today spoken by only seven elderly people. Both languages exhibit 'free' word order with regards to syntactic ordering, are double-marking and ergative-absolutive with optional case-marking, and have complex predicates. MalakMalak furthermore utilizes serial and compound coverb constructions. Children no longer actively acquire the two languages (Figure 1).

Kriol is an English-lexified Creole spoken in different varieties across northern Australia by about 30,000[1] people (Obata & Lee 2009; O'Shannessy & Meakins 2016). All speakers of Jaminjung and MalakMalak are also fluent in a variety of Kriol. For this study, I only focus on the Roper Kriol variety spoken in Ngukurr since it is the most thoroughly documented variety.

1.2. Frames of Reference, Deixis and Cognition

Levinson and Wilkins (2006b: 541), using Talmy's (1983, 1985, 2000a, 2000b) terminology of FIGURE and GROUND define FoR as 'coordinate systems whose function it is to designate angles or directions in which a FIGURE can be found with respect to a

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[1] Estimating the number of Kriol speakers is not an easy feat. Dickson (2014: 26) comments that the numbers range from conservative census data of 6,781 speakers to 30,000 from religious organizations advertising the Kriol Bible translation.
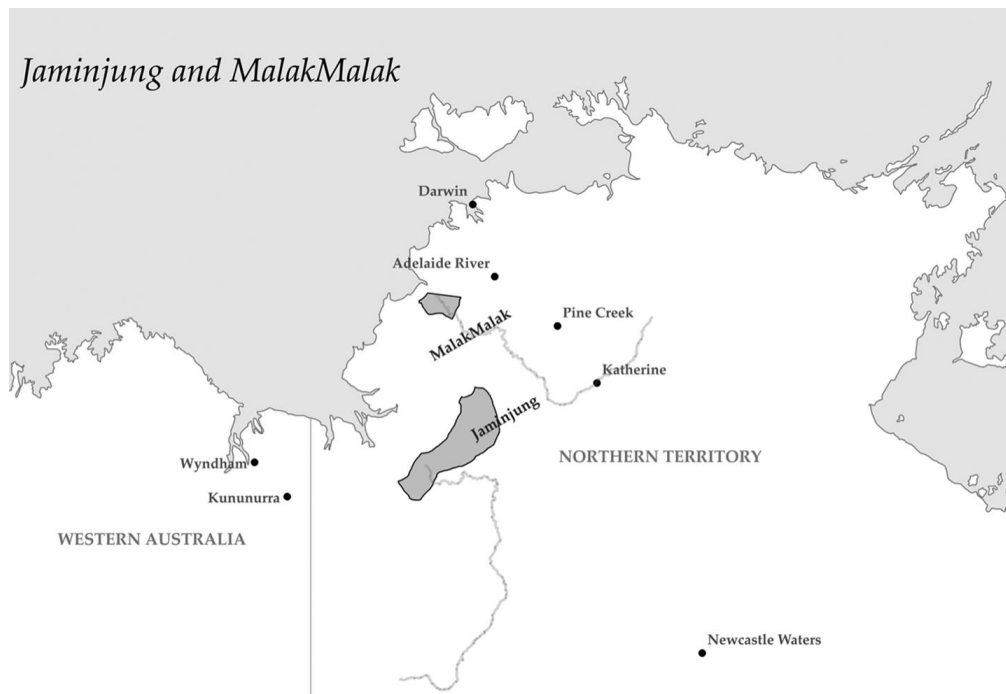
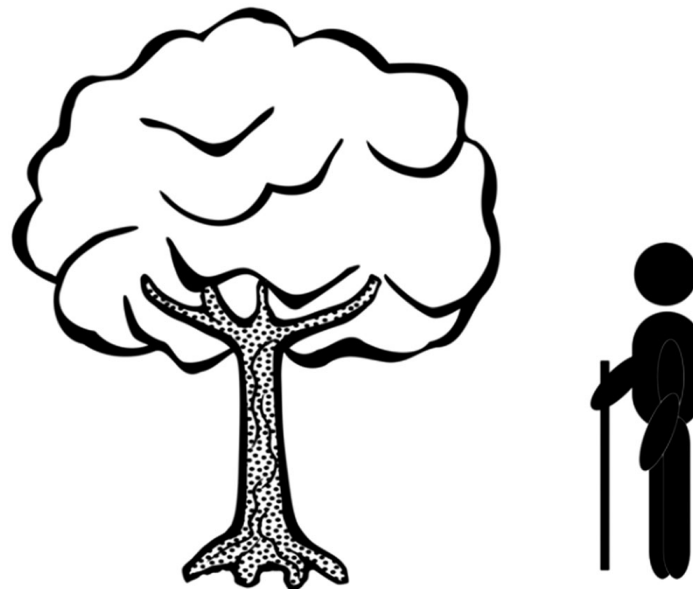**Figure 1** The location of Jaminjung and MalakMalak

Figure 2 *Men & Tree* task for example (2). Note this is a sketch of the actual pictures that were photos of a toy man and a tree. See Pederson *et al.* (1998: 564) for reproductions of the complete set of *Men & Tree* pictures

GROUND'. The examples in (2) can all be used to describe configurations of a toy man and a tree in a table top picture setting as in Figure 2.

(2) a. The tree is in front of the man (from the man's perspective).
    b. The tree is left of the man (from my/the speaker's perspective).
    c. The man and the tree are in front of me.
    d. The tree is east of the man.
    e. The tree is uphill of the man.
    f. The man is facing the tree.
    g. The man is facing east.

In this paper Bohnemeyer and O'Meara's (2012: 219, 240) definition of FoR is adopted. Here, orientation is incorporated as part of spatial frames of reference, specifically as coordinate systems 'of one or more axes centred on the referential GROUND in representations of location and the FIGURE in representations of orientation and direction of motion'.

The distribution across languages of the types of FoR introduced in Section 1 is not even. While binary FoR where the anchor is (part of) the ground—intrinsic and direct FoR—appear to be an almost universal feature (Danziger 1999, 2001; Palmer 2015: 211), languages typically favour only one of the ternary FoR where the anchor is not the ground, either absolute or relative FoR, but not both (Levinson & Wilkins 2006a: 22, 2006c: 541–542; Pederson *et al.* 1998).

This paper focuses on languages that prefer using absolute to relative FoR. Malak-Malak and Kriol utilize systems based on the setting and rising sun glossed as *sunrise* and *sunset*. In Jaminjung, river drainage *downstream* and *upstream* is used and Malak-Malak employs an additional system of prevailing wind directions *inland wind* and *sea wind*.[2] In Jaminjung and MalakMalak the use of absolute terms might be restricted to 'location' descriptions without overt specifications of ground as in examples (3a) and (3b), or to 'orientation' descriptions as in example (3c), while descriptions like those in examples (3d) and (3e) where an overt ground is present are not allowed.

(3) a. The man is downstream/to the sunrise side (of me).
    b. The man is on the sea wind side (of me).
    c. The man is facing downstream/into the sea wind/towards the sunrise.
    d. The man is on the sunrise side of the tree.
    e. The man is downstream/on the sea wind side of the tree.

It will be shown, that in Jaminjung examples (3a) and (3c) are allowed but example (3e) is not. In MalakMalak, examples (3a) and (3c) are acceptable, while examples (3b), (3d) and (3e) are not. Kriol allows examples (3a), (3c) and (3d). This paper describes and analyzes these types of usage restrictions, taking into account cognitive approaches and morphosyntactic features as well as cultural salience.

I refer to 'location' whenever a figure is *located* with respect to a ground as in *the house is in front of the tree* and to 'orientation' descriptions when a figure's internal facets are *oriented* with respect to a ground as in *the house is facing the tree.* As a result, I define

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[2] The 'inland wind' *dangid* blows from a southeasterly direction (from inland) and the 'sea wind' *nuly* blows from a northwesterly direction (from the ocean).

'orientation' as inherently dynamic in accordance with Slobin's (2008) characterization of semantically parallel functions of 'path of vision' and 'paths of motion'. Furthermore, I define inherently 'static' or 'standing' terms as those that are bounded, i.e. have an endpoint in the speaker's mind and are often used in 'location' descriptions. 'Dynamic' terms, on the other hand, are defined as unbounded, without an endpoint in the speaker's mind and often used in 'motion' or 'orientation' descriptions.

1.3. Methodology

Strictly comparable stimuli for all three languages to use in this analysis were unavailable to me. Consequently, all observations rely on published material and data from my own stimuli sessions collected in fieldwork settings.

The data for Jaminjung include published (Schultze-Berndt 2000, 2006) and unpublished material (Schultze-Berndt 2008). The unpublished material contains only very limited *Men & Tree* stimuli data, however, results are described in some detail in Schultze-Berndt (2006). Additionally, Hoffmann's (2012) own data from fieldwork on spatial and motion expressions, were used. For this a set of stimuli described in Hoffmann (2011) was utilized. The corpus dataset includes narrative and communicative discourse and consists of about 16,530 words.

Kriol data were also taken from published material (Bibles 2010; Lee 2014; Meakins 2011; Sandefur & Sandefur 1982) and my own fieldwork (Hoffmann 2010). The corpus data include narrative and communicative discourses and comprise about 6,156 words.

For the MalakMalak data, the basis for this study are the *Men & Tree* stimuli created by the Space and Cognition Group in Nijmegen (Levinson *et al.* 1992) and the *Ball & Chair* task developed to address a number of issues arising out of the *Men & Tree* data (Bohnemeyer & Baez 2008). Both types of stimuli sessions were run with only three pairs of speakers, most of whom did not partake in the entire sets.[3] Furthermore, I take into account spatial descriptions in narrative and communicative discourses. The corpus data (Hoffmann 2015a) consist of newly collected alongside published (Birk 1976) and previously unpublished data (Birk 1974; Crocombe 2010) of about 35,721 words. For the latter all examples are transcribed, glossed and translated by the author.

To create a somewhat comparable corpus, for all three languages narrative discourse includes dreamtime creation stories and local history and communicative discourse consists of bush stories describing everyday life and traditional activities. Some Kriol stories are published, e.g. Sandefur & Sandefur (1982), and all Jaminjung (Hoffmann 2012; Schultze-Berndt 2008) and MalakMalak data (Hoffmann 2015a) are archived.

Finally, a small comparable corpus was put together using the *Frog Story* narration. This is a children's picture book (Meyer 1969) that has been used extensively in cross-

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[3] For all three languages it proved difficult to run the stimuli successfully in the field. Speakers were often uncomfortable with the highly artificial setting of the task.

linguistic research on the typology of motion expressions, e.g. (Berman & Slobin 1994; Strömqvist & Verhoeven 2004). There are six *Frog Story* narrations in Jaminjung (4,433 words), seven in Kriol (6,034 words) and one in MalakMalak (401 words).

2. Frames of Reference and Orientation in Jaminjung, Kriol and MalakMalak

This section briefly introduces intrinsic and relative FoR in the three languages before providing a more detailed account of their absolute systems. The latter will include a systematic condensed overview of the variety of absolute systems found in Australian languages.

2.1. Intrinsic FoR

Intrinsic FoR is used in all three languages (see example (4)). It requires some kind of portioning of the ground object into named facets from which search domains can be projected (Levinson & Wilkins 2006b: 20). It is the most commonly used FoR.

(4) a. *birang na gayu gujardinggina na gurdij*

DJA **birang**   na   ga-yu   guyarding-gina   na   gurdij

behind   NOW   3SG-be.PRS   mother-POSS   NOW   stand

'he is now standing behind his mother' (Schultze-Berndt 2008)

ROP b. *det gel slipin biyainwei yu*

det   gel   slip-in   **biyain-wei**   yu

DET   girl   sleep-PROG   behind-DIR   2SG

'the girl is sleeping behind you' (Lee 2004)

MPB c. *tjung angunduna muyu*

tjung   **angundu-na**   mu-yu

tree   behind-LOC   3SG.N*-stand.PST

'the tree stood behind (the man)' (DH12_A23_07.145: M&T 2.4)[4]

   In all three examples in (4), the notion of 'behind' refers to the intrinsic sides of the figure (*he, the girl, the tree*) with regards to the ground (*mother, you, the man*) and not to a relative viewpoint whereby the figure would be located behind the ground from the speaker's perspective.

2.2. Relative FoR

Relative FoR involves mapping from the observer's own axes (front, back, left, right) onto the ground object (Levinson & Wilkins 2006b: 21). In example (5), a figure (*it, the kangaroo, the chair*) is located *behind, in front of* and *to the right of* a ground object (*the bottle, the tree, the ball*) from the speaker's perspective. These are complex ternary mappings involving a triangulation of figure, ground and viewer.

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[4] All examples from the author's data are marked with their original numbering and can be found in Hoffmann (2015a) and (2012).

(5)   a.   *birang gayu mawudgi*
DJA   **birang**   ga-yu   mawud-gi
            behind   3SG-be.PRS   bottle-LOC
            'it is behind the bottle' (Schultze-
                Berndt 2006: 109)
ROP   b.   *kenguru bin hophop en jendap lida la tri*
            kenguru   bin   hop-hop   en   jendap   **lida**   la   tri
            kangaroo   AUX.PST   RDP-hop   and   stand   in.front   LOC   tree
            'the kangaroo hopped and stood in front of the tree' (DH10_A14_01.0021)
MPB   c.   *wuendueny elimiri wuyu chairwe*
            wuendueny   **elimiri**   wu-yu   chair = we
            3SG.N   front   3SG.N-stand.PST   chair = FOC
            'the chair is in front' (DH12_A42_04.012; B&C 2.12)

In Jaminjung relative FoR is restricted to grounds without intrinsic sides and inanimate grounds. The Kriol data are not extensive enough to allow for similar generalizations, however, they hold true for the corpus used in this study. Relative FoR in MalakMalak is also rarely used. In example (5c) elicited from the *Ball & Chair* task, the chair is facing away from the speaker with the ball lying towards the speaker. Consequently, from the speaker's perspective, the chair is located *in front* since the chair, ball and speaker are perceived as being in a line. To clarify the setup further in the game, the director described the very same picture as the ball being *behind* the chair using intrinsic FoR.

2.3. Absolute FoR

The diversity and usage of absolute systems have been of particular interest to researchers of spatial language. Absolute FoR require fixed bearings that are instantly available to all members of the community (Levinson & Wilkins 2006b: 21). There are a variety of absolute systems attested in Australian languages. These are based on the compass (e.g. Warlpiri (Laughren 1978)) and the direction of the rising and setting sun (MalakMalak (Hoffmann 2016)), prevailing wind directions (Kala Lagaw Ya (Bani 2001; Stirling 2011: 182)), river drainage (Dyirbal (Dixon 1972)), ocean (Iwaidja (Edmonds-Wathen 2011, 2012: 142–143)), tides (Bardi (Bowern 2012: 30)) or culturally significant locations (Gun'nartpa (Carew pc 2016)). In some languages, more than one system overlap, like compass and river drainage systems in Wardaman (Merlan 1994: 150–153) and Yir Yoront (Alpher 1991: 64–67). Murrinh-Patha uses no absolute terms at all and instead relies on deixis, toponyms and gesture in spatial descriptions (Blythe *et al.* 2016).

Brown (1983), Levinson and Wilkins (2006c) and Levinson (1998) argue that absolute systems are necessarily arbitrary and fixed which distinguishes them from unfixed landmark systems. The main point of distinction here is that these authors view absolute as distinct from relative FoR systems in being 'fixed' in space and not dependent on a point of view or bodily rotation. Additionally, they are 'arbitrary' in the sense that any type of reference point can be used (rivers, mountains, sun,

compass points, etc.) as long as everyone in a speaker community adopts the same system. Landmark-based terms then are 'unfixed' in the sense that they are not used systematically, but in an ad-hoc manner. Bohnemeyer and O'Meara (2012) differentiate abstracted or geomorphic (angular-anchored) from landmark-based systems (head-anchored). Palmer (2015: 210) proposes the 'Topographic Correspondence Hypothesis' concluding that no absolute system is ever arbitrary, but always 'anchored in environmental cues'.

Danziger (2010: 171) highlights two different types of absolute FoR with regards to deixis: those where the ground is deictic (*the cup is east of me*), and those where the ground is not deictic (*the cup is to the east of the bottle*). Expanding on these previous observations, three contexts where absolute terms may be used are identified: Descriptions [1] with an overt ground that is not the deictic centre; [2] without an overt ground where the ground is always the deictic centre or two figures of the same type act as each other's grounds; and [3] where a figure is oriented with respect to a ground.

The following sections provide detailed accounts of usage restrictions of absolute terms in all three languages within these established contexts.

2.3.1. Absolute Frame of Reference in Jaminjung

Jaminjung makes use of one absolute FoR system based on river drainage. It is based on the course of the Victoria River: *buya* 'downstream' and *manamba* 'upstream'. The terms are applied to the exact direction of the river flow depending on where a speaker is located. Additionally, the terms can be applied to other salient waterways, but the system breaks down outside the speakers' familiar territory (Schultze-Berndt 2006: 88).

The usage of absolute FoR is highly restricted in Jaminjung. According to Schultze-Berndt (2006: 106) speakers may not use the absolute terms 'in order to locate a figure with respect to a ground which is not the deictic centre, i.e. a ground that has to be made explicit as a reference point (as in *the man is downstream of the tree*)'. In example (6), the ground (*here*) is also the deictic centre. When two figures of the same type are described in relation to one another as in example (7) with two figures (toy men) standing slightly apart and facing sideways they are each other's ground and no deixis is involved.

(6)	*brijbiyang gayuni manamba*		
DJA	<u>brij</u> = biyang	ga-yu = ni	**manamba**
	<u>bridge</u> = now	3SG-be.PRS = DS	upstream

'the bridge is upstream (from here)' (Schultze-Berndt 2008: Jam169)

(7)	*buya gayu, thanyung manamba gayu*				
DJA	**buya**	ga-yu	thanyung	**manamba**	ga-yu
	downstream	3SG-be.PRS	other	upstream	3SG-be.PRS

'one (toy man) is downstream, the other is upstream' (Schultze-Berndt 2008: F-4-14 17/06/98)

Furthermore, the absolute terms can be metaphorically extended as *manamba-ngining* 'upstream-L.ALL' and *buya-wun* 'downstream-L.ABL' to encode top (shirt) vs. bottom clothes (skirt) (Schultze-Berndt 2014). In this meaning, the centre of a person's body is the anchored point from which the directions project. This centre is not overtly expressed and thus assumed similarly to the ground as deictic centre in example (6). However, the body itself cannot be used as a reference point for the absolute system in, for example, describing the movement of food through the guts as 'downstream'.

The river drainage terms are also utilized to denote the orientation of a figure as in example (8).

(8)   *mayibiya jirrama bunthuyu janungbari ngiyinawurla gayuni juwiya, janyungbari*
       manambangining gayu

DJA   mayi = bitya   jirrama   bunthu-yu   jangunbari   ngiyina-wurla
       man = NOW   two   12PL-be.PRS   other   PROX-DIR
       ga-yu = ni   juwiya   janjungbari   **manamba-ngining**   ga-yu
       3SG-be.PRS = DS   nose   other   upstream-L/ALL   3SG-be.PRS
       'there are two men, one has his nose this way, the other is facing upstream' (Schultze-
          Berndt 2006: 107)

The absolute terms fall into Bohnemeyer and O'Meara's (2012) head-anchored category. In small-scale settings, orientation is preferred over location descriptions for absolute terms (Schultze-Berndt 2006: 106).

Morphosyntactically, Jaminjung's river drainage terms alongside lexemes based on verticality take specialized allative *-ngining* as in example (8) and ablative case-marking *-yun* (Schultze-Berndt 2000: 48) used nowhere else in the language. These case markers may (example (8)) or may not (example (9)) be used in orientation descriptions.

(9)   *nindubiyang manamba mung gayu*
DJA   nindu = biyang   **manamba**   mung   ga-yu
       horse = NOW   upstream   look.at   3SG-be.PRS
       'the horse is now looking upstream' (Schultze-Berndt 2008:
          D30128)

Furthermore, the absolute terms never take locative case marking even in descriptions of spatial location as in example (10), where other place-denoting nominals (such as *thanggad-gi*) are locative case-marked.

(10)   *ngayugba manamba ngagba thanggadgi*
DJA   nga-yug-ba   **manamba**   nga-gba   **thanggad-gi**
       1SG = NOW   upstream   1SG-be.PST   junction-LOC
       'I was upstream, at the junction (fishing trip story 2nd half)'
          (Schultze-Berndt 2008: TAP065: DMc (TAP039-TAPO70))

These morphosyntactic restrictions underline the usage restrictions on Jaminjung's absolute terms. The lexemes are inherently dynamic and, as a result, cannot be used to describe spatial configurations with overt grounds.

2.3.2. Absolute Frames of Reference in Kriol

For absolute FoR the Roper variety of Kriol employs a two-point system based on the location/direction of the setting and rising sun (*sanrais/sangodan* 'sunrise/sunset') (Hoffmann 2011: 106–122). These terms may occur in any type of location description, including those without (example (11)) and with an overt ground (example (12)) and in orientation (example (13)) or motion descriptions (example (14)). This is an angular-anchored FoR in Bohnemeyer and O'Meara's (2012) classification.

(11)   *wal sangidapwei dei bin faindim, budum det kenu*

ROP	wal	**sangdidap**-**wei**	dei	bin	faind-im
	well	sunrise-way.DIR	3PL	AUX.PST	find-TR

'they found it where the sun rises (from here)' (Sandefur & Sandefur 1982: Conversational_Kriol_Tape6_JapaneseBoat_0034)

(12)   *det ka bin ran en stap sangodansaid langa det haus*

ROP	det	ka	bin	ran	en	stap	**sangodan**-**said**	langa	det	haus
	DET	car	AUX.PST	run	and	stop	sunset-side.LOC	LOC	DET	house

'the car went and stopped on the sunset side of the house' (DH10_A15_09_0025)

(13)   *thribala bin lukinat sangidapwei, en thribala sangodanwei*

ROP	thri-bala	bin	lukinat	**sangidap**-**wei**	en	thri-bala
	three-NOM	AUX.PST	look.at	sunrise-way.DIR	and	three-NOM

sangodan-wei
sunset-way. DIR

'three faced the sunrise and three faced the sunset' (Aboriginal Bibles 2010: Fes Kings 7.25)

(14)   *det bot bin godan sangodan*

ROP	det	bot	bin	go-dan	**sangodan**
	DET	boat	AUX.PST	go-down	sunset

'the boat went down towards the sunset'
    (DH10_A15_14_0056)

Morphosyntactic marking of Kriol's absolute terms reflects their different uses. In descriptions where no overt ground is mentioned (examples (11) and (13)), the directional suffix –*wei* is usually, though not necessarily (example (14)) attached. Where the ground is either explicitly expressed (example (12)) or where the lexeme is nominalized (example (15)), the locative suffix -*said* attaches. Additionally, the allative/locative preposition *la(nga)* only precedes absolute terms in spatial descriptions when they encode a location or endpoint of motion rather than a direction as in examples (15) and (16). This is true for all adverbials in the language.

(15)   *Im garra jidan bos blanga ola kantri brom det solwoda langa sanraisaid raidap langa det solwoda langa sangodansaid*

ROP	im	garra	jidan	bos	blanga	ola	kantri
	3SG.PST	FUT	stay	boss	DAT	all	country
	brom	det	solwoda	**langa**	**sanrais**-**said**	raidap	
	from	DET	salt.water	ALL/LOC	sunrise-side.LOC	all.the.way	
	langa	det	solwoda	**langa**	**sangodan**-**said**		
	ALL/LOC	DET	salt.water	ALL/LOC	sunset-side.LOC		

'His dominion shall be from sea to sea/He shall govern all countries from the sea where the sunrises to the sea where the sun sets' (Bibles 2010: Sekaraiya 14.8)

(16)   *det kenguru bin jampjamp la dissaidwei langa det pedok*
ROP   Det   kenguru   bin   jamp-jamp   **la**   **dissaid-wei**
         DET   kangaroo   AUX.PST   RDP-jump   LOC/ALL   this + side-DIR
         langa   det   pedok
         LOC/ALL   DET   paddock
         'the kangaroo jumped onto this side of the fence' (DH10_A15_16_007)

The sun-based terms may also occur as bare nominals as time-denoting expressions 'at sunrise'.

2.3.3. Absolute Frame of Reference in MalakMalak

MalakMalak employs two absolute FoR systems. One is based on the directions of prevailing winds blowing from the sea (*nuly*) and inland (*dangid*) during the wet and dry season respectively. Secondly, a solar-based system encodes the directions of the setting (*miri tjalk* 'sun go down, sunset') and rising sun (*miri baiga* 'sun go up, sunrise'). The latter terms are phrasal.[5] Both sets are head-anchored in Bohnemeyer and O'Meara's (2012) sense.

These systems are usage restricted. The sun-based terms are used in the same way as Jaminjung's river drainage terms. They never occur with overt grounds and the ground is either interpreted as the deictic centre as in example (17) or, when two figures of the same type are described in relation to one another as in example (18), in a parallel construction to example (7), they are each other's ground and no deixis is involved. These terms also occur in orientation descriptions (example (19)).

(17)   *miri tjalkma, wuruma wuta*
MPB   **miri**   **tjalk-ma**   wuru-ma   wu-ta
         sun   fall-CONT   stand-CONT   3PL-go/be.PST
         'they were standing where the sun sets' (DH12_A24_01.077: M&T 3.2)

(18)   *miri tjalkma yina, yina miri baigama*
MPB   **miri**   **tjalk-ma**   yina   yina   **miri**   **pai-ka-ma**
         sun   fall- CONT   this   this   sun   change.location-come-CONT
         'this one is where the sun sets and this one is where the sun rises' (DH12_A24_03.546: M&T 4.9)

MalakMalak's absolute terms based on the directions of prevailing winds are restricted to orientation descriptions as in (19).

(19)   *yinya nende dangiden pud wurunguny mirinen baigama*
MPB   yinya   nende   **dangid-en**   pud
         man   thing/person   inland.wind-DIR   chest
         wu-runguny   **miri-nen**   **pai-ka-ma**
         3PL-go/be.IPFV   sun-DIR   change.location-come-CONT
         'there are two people, they are facing the inland wind direction, towards where the sun comes up' (DH12_A15_03.096, M&T 3.1)

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[5] In the neighbouring language Ngan'gityemeri a river drainage absolute FoR system exists alongside one based on the rising and setting sun. The latter terms are greatly disfavoured (Reid 2011). No distinction of this kind is observed for MalakMalak.

Noticeably, MalakMalak speakers made frequent use of toponyms, named landmarks, in the stimuli sessions as an additional strategy to denote location and orientation. This approach is not observed for Kriol and Jaminjung. Toponyms can be employed in orientation (examples (20) and (23)) or location descriptions (example (21)). The latter are restricted to uses without an overt ground in the same way as the absolute terms denoting sunset and sunrise.

(20)　　*payagang tjedali yuyu, WaliWaliyende nendewe*

MPB	payak-ang	tjed-ali	yu-yu	**WaliWali-yende**
	back-give	stand-PART	3SG.M-stand.PST	Daly.River-LOC

nende = we
thing/person = FOC

'one stood with his back, the person (the toy man), with respect to the Daly River'
　　(DH12_A15_04.081, M&T 4.8)

(21)　　*chairwe Wunellennen wuede*

MPB	chair = we	**Wunellen-nen**	wue-de
	chair = FOC	place.name-DIR	3SG.N-stand.PST

'the chair was standing towards Wunellen Billabong'
　　(DH12_V44_03.061, B&C 3.2)

The terms *kinangga* 'this side' and *ngunanggi* 'that side' are deictic in origin (Hoffmann 2014) but have lexicalized as a type of place name to encode the predominantly MalakMalak-inhabited side of the river: *kinangga* '<u>this</u> side, the North-Eastern riverbank side' and the '<u>other</u> side, the South-Western riverbank side' *ngunanggi*. Both meanings exist alongside one another. In example (22), they are used contrastively and the speaker describes the location of the ball 'on the <u>other</u> side' with regards to the chair. The chair on the other hand is described as being 'on <u>this</u> side' in relation to the ball. Figure 3 shows the stimuli setup in the *Ball & Chair* task for this example.

(22)　　*ngunanggina wuyu, duk puyunduk, kinangga yide, chairwe*

MPB	**ngun-na-nggi-na**	wu-yu	duk	puyunduk
	DIST-LOC-PROX.DIR-LOC	3SG.N-stand.PST	place	underneath
	ki-na-ngga	wue-de	chair = we	
	PROX-LOC-DIST.DIR	3SG.N-go/be.PRS	chair = FOC	

'it (the ball) was on the other side, underneath, the chair is on this side'
　　(DH12_V44_04.102-103; B&C 4.4)

In example (23), on the other hand, *ngunanggi* functions in the same way as the toponym *WaliWali*. It describes the orientation of two toy men facing each other. One is looking towards the Daly River and the other has his back towards the river. The speaker here chose to describe the latter man as 'facing (away) from' the South-Western riverbank side.

(23)　　*WaliWali pudang tjedali yuyu, ngunanggimany pudang tjedali yuyu*

MPB	**WaliWali**	pud-ang	tjed-ali	yuyu
	Daly River	chest-give	stand- PART	3SG.M-stand.PST
	ngun-na-nggi-many	pud-ang	tjed-ali	yu-yu
	DIST-LOC-PROX.DIR-ABL	chest-give	stand- PART	3SG.M-stand.PST

'one (toy man) faced the Daly River, and (the other toy man) faced away from that side, from the South-Western riverbank' (DH12_A15_04.084-086; M&T 4.8)
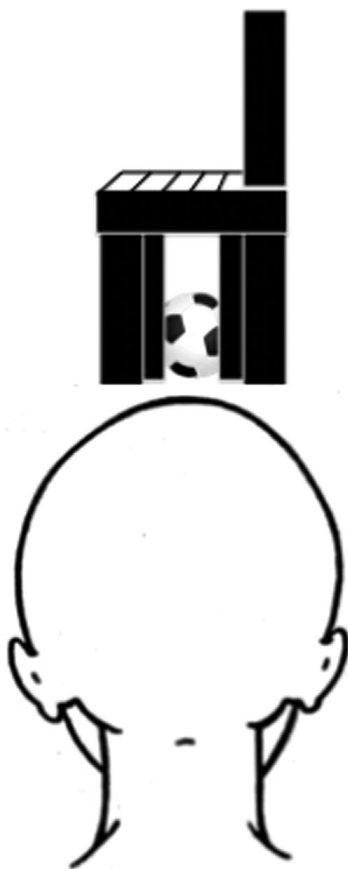
Figure 3 Stimuli for example (22). Note that this is a sketch of the actual photos of a ball and chair in different configurations. See Bohnemeyer (2013) for a complete set of the *Ball & Chair* stimuli photo set

In this example the parallel function of toponyms and the lexicalized riverbank terms is furthermore underlined by the parallel structure of the spatial description using the same complex predicate *pudang tjedali yuyu*.

In line with what was observed for Jaminjung and Kriol, MalakMalak's absolute terms are specially morphosyntactically marked. The directional suffix *–(y)en* always attaches to the wind-based absolute terms (example (19)) unless the wind itself or a time of day during which the wind typically blows is discussed. The suffix also attaches to the sun-based lexemes, for example *miri-nen baigama* in example (19). These latter terms may encode location descriptions without overt ground specifications as in examples (17) and (18), where they, similar to Jaminjung's river drainage terms, always remain unmarked.

Consequently, the wind and sun-based lexemes are inherently dynamic which is furthermore underlined by the fact that neither can take locative or ablative case marking. Toponyms and the lexicalized riverbank terms, on the other hand, are inherently locative. The former (rarely) attaches optional locative case marking and the

latter contains locative case marking as *ki-na-ngga* 'PROX-LOC-DIST.DIR' (example (22)) or adds the locative case marker in *ngun-an-ggi-na* (example (22)). Toponyms allow for directional (example (21)) as well as locative (example (20)) case marking or remain unmarked (example (23)). The riverbank terms never attach directional case marking. Finally, in (example (23)) the use of the ablative case marker *-many* underlines the denotation of *ngunanggi* as a (named) place rather than a direction. None of the absolute terms allows this case marking.

2.4. Usage Restrictions and Morphosyntactic Features of Absolute Frames of Reference in Jaminjung, MalakMalak and Kriol

The previous sections provided an overview of the types of absolute FoR used in Jaminjung, Kriol and MalakMalak. Three separate contexts in which absolute terms are used were discussed: [1] location descriptions of a figure with an overt ground; [2] location descriptions without an overt ground; and [3] descriptions that rely on the orientation of the figure in relation to a direction. I showed that Jaminjung only employs one set of absolute terms (river drainage) restricted to contexts [2] and [3]. Kriol also only uses one set, but allows for all three contexts. MalakMalak uses its wind-based absolute terms only in context [3], its sun-based lexemes in contexts [2] and [3], and makes widespread use of toponyms and lexicalized riverbank terms to use in [2] and [3] as well. Table 1 summarizes these findings.

The use of these absolute terms is morphosyntactically marked. Jaminjung's river drainage terms remain unmarked when no overt ground is expressed and take specialized allative case marking in spatial descriptions involving orientation. Kriol's sun-based absolute terms utilize the locative suffix *–said* in location descriptions and the

Table 1 Types of absolute Frames of Reference and their usage in Jaminjung, Kriol and MalakMalak

	Jaminjung	Kriol	MalakMalak
Systems	1. river drainage	1. sun	1. wind 2. sun 3. toponyms
[1] Overt ground	• not found	• no LOC PREP • LOC SUF *–said*	1. wind: not found 2. sun: not found 3. toponyms: not found
[2] No overt ground	• no CM	• sometimes LOC PREP • LOC SUF *–said*	1. wind: not found 2. sun: found without CM 3. toponyms: found sometimes with LOC CM
[3] Orientation	• optional special ALL CM	• no ALL PREP • sometimes DIR SUF *–wei*	1. wind: found with DIR CM 2. sun: found with DIR CM 3. toponyms: found with DIR CM, LOC CM, ABL CM , no CM

directional suffix –*wei* when the figure is oriented or moving. Furthermore, the locative preposition *langa* may be used when the spatial description encodes a location rather than a direction. In MalakMalak toponyms and toponym-like lexicalized terms denoting the respective sides of the Daly River, *kinangga/ngunanggi* are inherently locative. The former may take any case marking while the latter never attach directional case markers. The sun-based terms remain unmarked in location descriptions and attach directional case marking to denote orientation. The wind-based terms are restricted to descriptions of orientation and always take directional case marking. Both types are inherently dynamic.

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In all three languages, the absolute terms (usually) appear bare, i.e. without any case marking when there is no overt ground. It can be argued that this makes this setting the unmarked default occurrence. For Warrwa McGregor (2006: 151f.) observes that 'when objects are located with respect to a different centre from the speaker, the directional forms are used, thus invoking as it were figurative or metaphorical motion from that centre towards the figure'. While my data do not support an explanation solely based on deixis, the speaker as ground holds true for all those spatial descriptions where the location of only one figure is described.

3. Usage Patterns of Absolute Terms

While many aspects surrounding Frames of Reference have been analyzed in some detail, usage patterns for absolute term systems have only been tentatively described. Some studies have focused on scale. For Australian languages Edmonds-Wathen (2012: 91f) observes that non-Pama-Nyungan languages, including Jaminjung and Warrwa tend to use the absolute frame in small-scale space only when other resources are not available, while Pama-Nyungan languages such as Gurindji, Guugu Yimithirr and Kuuk Thaayorre might make widespread use of absolute systems in large- and small-scale descriptions.

Another type of comparison takes into account whether or not absolute terms are used for both standing or location and facing or orientation information. In Iwaidja

absolute FoR is used for both (Edmonds-Wathen 2012: 141). Schultze-Berndt (2006: 107) and Levinson (2006: 186) note for Jaminjung and Yélî Dnye that orientation or facing information is given in absolute terms while location or standing information uses intrinsic FoR in small-scale descriptions.

This paper has shown in the previous section that the use of absolute terms in Jaminjung, Kriol and MalakMalak is determined by the existence of an overt ground and whether or not a figure is oriented rather than located in space. Section 3.1 discusses a number of cognitive approaches to absolute Frames of Reference. These provide useful insight into the nature of the three languages' systems and their restrictions. Following this, Section 3.2 analyses cultural salience of these terms and determines that the languages' usage deeply reflects the cultural setting of their speakers.

3.1. Cognitive Approaches

Many studies of Frames of Reference systems have focused on cognitive approaches taking into account conceptual perceptions and the notion of different types of relations. In the following overview I briefly introduce a number of approaches and how they relate to the type of data described in Section 2.3.

3.1.1. Boundedness

Palmer (2002) distinguishes between *unbounded* and *bounded* axes with regards to absolute Frames of Reference. While the former have no conceptual endpoint and terminate outside the map range, the latter have an endpoint in the speakers' mind.

Jaminjung's river drainage and MalakMalak's wind-based system are unbounded. Both terminate outside the map range with the Victoria River flowing into and out of Jaminjung territory and the inland and sea winds blowing without physical beginning or end points. Usage of these terms is highly restricted to orientation and, for Jaminjung, location descriptions without an overt ground. The morphosyntactic treatment of the absolute terms is revealing. As discussed in Section 2.3, MalakMalak necessarily attaches directional, and Jaminjung optionally specialized case markings in settings where a figure is oriented towards an absolute direction (examples (8) and (19)). MalakMalak's wind-based terms are never used unless a figure is oriented or moving and consequently never add locative case marking. Even when Jaminjung's river drainage terms occur in location descriptions, they always remain unmarked (example (10)).

Kriol's absolute lexemes based on the setting and rising sun function differently from the same set in MalakMalak. I argue that while Kriol's sun-based system is bounded in nature, MalakMalak's is unbounded. As discussed in Section 2.3.2, the Kriol absolute terms may be used in any type of usage context including those where an overt ground is expressed. Additionally, they always attach the locative suffix *-said* in location descriptions and the locative preposition *langa* may precede the absolute term in location descriptions with overt grounds. These morphosyntactic features highlight the inherently bounded nature of the absolute terms having a

specific endpoint in the speakers' minds at the respective points on the horizon where the sun sets and rises. This argument is particularly compelling for systems (as Kriol's) that denote a two-point distinction rather than a more abstracted cardinal system of east–west and north–south. As described for Warlpiri (Laughren 1978: 6), Kriol's sun-based system may refer to a fixed position, rather than a direction, similar to a named landmark (example (15)).

MalakMalak's sun-based system also encodes a two-way distinction only. However, its usage suggests that it is unbounded and therefore, in the speakers' minds, the absolute terms terminate outside the map range. The system's use is restricted in the same way as Jaminjung's river drainage to orientation and location descriptions without an overt ground. Furthermore, morphosyntactically, the terms are treated in a similar way to Jaminjung's absolute terms with directional case marking in orientation and no case marking in location descriptions. Consequently, unlike the usage described for Kriol's sun-based terms, these may never refer to a position rather than a location and are inherently dynamic.

Finally, MalakMalak may use toponyms and the lexicalized riverbank terms in two usage contexts. The terms denote specific named landmarks that all have a fixed geographic position and therefore an endpoint in the speakers' minds. Morphosyntactically, they take any case marking including locative. Consequently, this system is bounded.

Table 2 provides an overview of the discussion in this section. In summary, the most usage restricted absolute FoR systems, namely MalakMalak's wind- and sun-based and Jaminjung's river drainage systems, are unbounded terminating outside the map and morphosyntactically marked accordingly. On the other hand, Kriol's sun-based system and MalakMalak's use of toponyms are bounded with a specific endpoint in the speakers' minds. Generally, the bounded type tends to be less usage-restricted than the unbounded one.

3.1.2. Geomorphic and landmark-based systems

Bohnemeyer and O'Meara (2012: 218f) argue for a distinction between geomorphic and landmark-based systems. *Geomorphic* systems' frames do not point towards an

Table 2 Boundedness in Jaminjung, Kriol and MalakMalak

Languages	Systems	Bounded	Unbounded	Contexts
Jaminjung	river drainage		X	restricted to [no overt ground] and [orientation]
Kriol	sun	X		unrestricted
MalakMalak	sun		X	restricted to [no overt ground] & [orientation]
	wind		X	restricted to [orientation]
	toponyms	X		restricted to [no overt ground] and [orientation]

anchor but are transposed or abstracted from it. For example, systems based on verticality are abstracted from the actual slope of the mountain they refer to. In *landmark-based* systems, on the other hand, the axes point towards a local landmark like an ocean.

As discussed in the previous section, only Kriol's sun-based system and Malak-Malak's use of toponyms is bounded. The boundedness is associated with fixed points in the landscape. Consequently, these types of absolute terms are landmark-based. The wind- and sun-based systems in MalakMalak and Jaminjung's river drainage system, on the other hand, are unbounded and not associated with an endpoint in the speakers' minds. As a result, these systems are geomorphic. They are abstracted from the flow of the river, the blowing of the wind and the idealized points of the sunrise and sunset. This becomes particularly clear in example (19) above, where a wind-based (*dangid* 'inland wind') and a sun-based term (*miri baigama* 'sunrise') are used alongside one another to denote a direction in-between the two. Similar observations have been made for, e.g. Guugu Yimithirr using a quadrant system of four cardinal directions (Haviland 1993: 5) or Warlpiri where absolute terms represent relative positions between two absolute cardinal points (Laughren 1978: 10).

Svorou (1994: 30) notes that 'certain entities within the environment of a community may be so important that they are used as major orientation points, as landmarks with movements or (locations) oriented with respect to them'. This is true for the Victoria River in Jaminjung country and also for MalakMalak's wind-based system since 'atmospheric features such as wind direction and weather patterns appear to fall into this category' (Stirling 2011: 198).

Absolute systems based on the course of the sun are common among the world's languages and highlight the obvious significance the sun has for people's everyday life. While the Kriol system is used over a relatively large area across Northern Australia, MalakMalak territory is much more locally confined. Both systems only utilize a two-way distinction and are therefore different from the abstracted compass-based system in a language like English based on the magnetic poles and less culturally immediate.

Speakers of MalakMalak also make extensive use of landmark-based toponyms as in examples (20) and (21) and (rarely) people's locations (example (24)). Interestingly, however, ad-hoc landmarks based on generic objects in the real world outside the stimuli setup are never used as reference points in the language.

(24)   *Jigbalanen nuenueyen wutangga*
MPB   **Jigbala-nen**   nue-nue-yen   wu-ta-ngga
        name-DIR   3SG.F-sit.PRS-DIR   3PL-go/be.PST-DIST.DIR
        'they (the toy men) are (facing) towards where Jigbala is sitting' (DH12_A15_03.114, M&T 3.8)

For Jaminjung on the other hand, Schultze-Berndt (2006) observes that, in small-scale descriptions ad-hoc landmarks are preferred over absolute terms as in example (25).

(25)   *binkabinawari mung gayu*
DJA   **binka**-bina-wari   mung   ga-yu
           river-ALL-QUAL   look.at   3SG-be.PRS
           'it (the cow) is looking towards the river' (Schultze-Berndt 2008:
                 ES96_A13_01.230)

Table 3 summarizes my findings. While those systems that allow for less restricted contexts are landmark-based, the more restricted ones are geomorphic. These observations are parallel to what was observed in Section 3.1.1 regarding boundedness.

Consequently, the distinctions drawn by Palmer (2002) and Bohnemeyer and O'Meara (2012) between different types of absolute terms are somewhat reflected in usage and morphosyntactic patterns.

3.2. Cultural Salience

Another way to analyze the restrictions placed on usage of absolute terms in my language sample is to take cultural salience into account. What are the scenarios in which absolute FoR with overt grounds where the speaker's deictic centre is not the ground is used? They include way-finding and direction-giving or to locate places in relation to one another in narratives. I will look at both scenarios in turn.

Route descriptions are not a 'natural' type of discourse for the MalakMalak and Jaminjung peoples. The land itself is home, hunting ground and myth. Therefore, people are maximally familiar with landscape features of their traditional (and neighbouring) lands. This makes giving directions or describing locations of landmarks with regards to one another almost obsolete. The speaker community only requires location descriptions for immediate context. In fact, all route descriptions in my corpus are elicited and the speakers were rather hesitant to provide these descriptions.[6] At the same time, this type of 'unnatural' discourse can be very revealing to illuminate how speakers use (or do not use) the system in novel contexts. Bowern (2016) discerns that in Bardi, giving directions involves providing a chain of place names between the speaker's current location and the goal rather than using the language's absolute term

Table 3 Geomorphic and landmark-based systems in Jaminjung, Kriol and MalakMalak

Languages	Systems	Landmark-based	Geomorphic	Contexts
Jaminjung	river drainage		X	restricted to [no overt ground] & [orientation]
Kriol	sun	X		unrestricted
MalakMalak	sun		X	restricted to [no overt ground] & [orientation]
	wind		X	restricted to [orientation]
	toponyms	X		restricted to [no overt ground] & [orientation]

systems. This was also observed in my own corpus where speakers might use a string of toponyms for reference as in the Kriol example (26).

(26)   *yu passim Wilton River, goon raitap Roper Bar*
ROP   yu   pas-im   **Wilton Riva**   go-on   raitap   kros-im   **Roper Bar**
       2SG   pass-TR   Wilton River   go-on   right-up   cross-TR   Roper Bar
       'you pass (over) the Wilton River and then you continue onwards to Roper Bar'
          (DH10_A15_13_0013-0014)

If absolute terms are used, the speaker remains the deictic centre as in the Jaminjung example (27).

(27)   *mamamba bajga::, laginy bajga jamurrugu na jid*
DJA   **manamba**   baj-ga   laginy   baj-ga   jamurrugu   <u>na</u>   jid
       upstream   IMP-go   turnoff   IMP-go   below   now   below
       'go upstream, take the turnoff, then down, downwards' (Schultze-Berndt 2008: D25030:)

A second potential use of absolute terms outside of descriptions where the ground is also the deictic centre is in narratives (Segal 1995, Zubin 1995). As argued elsewhere (Hoffmann 2015b, 2012), in Aboriginal dreamtime narratives, spatial may take precedence over the temporal order of events within the story told. Narrations, furthermore, may centre on a fixed location, often the place of the story-telling or a significant place nearby that becomes the deictic centre. Any absolute term within the story world is subject to this location as deictic centre via actual physical speaker location or deictic shift as in example (28). In this example, the deictic centre is established with the proximal deictic *ngiyiya*. The consequent direction *manamba* is relative to this deictic centre and not the speaker's location.

(28)   a.   *ngiyiya mulurruni ganungany*
DJA   **ngiyiya**   mulurru-ni   ganu-ngany
             PROX   old.woman-ERG   3SG:3SG-leave-PST
             'here the old woman had left it'
        b.   *manamba gajgany jalbud wuju mulurrurryulu ganingawu*
             manamba   ga-jgany   jalbud   wuju   mulurrurr-yulu
             upstream   3SG-go:PST   house   small   old.woman-INAL
             gani-ngawu
             3SG:3SG-see.PST
             'he went further upstream and saw the old woman's small house' (Schultze-Berndt
                2008: WHI057)

However, a targeted search of corpus data from MalakMalak and Kriol with mythological, historical and bush narrative examples shows no occurrences of absolute terms. In Jaminjung, absolute terms occur infrequently.[7]

The search looked at relative usage frequency of absolute terms, deictics, toponyms and (unnamed) landmarks. Figure 4 summarizes the findings for all spatial

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[6] However, Blythe *et al.* (2016) point out for Murrinh-Patha that route descriptions occur naturally when speakers discuss several travel options to get to a specific place. In the case of Murrinh-Patha the resulting description makes extensive use of deictics and is accompanied by gestures since there are no absolute terms in the language.
[7] To be used in a dissertation study on motion expressions in Jaminjung (Hoffmann 2011).
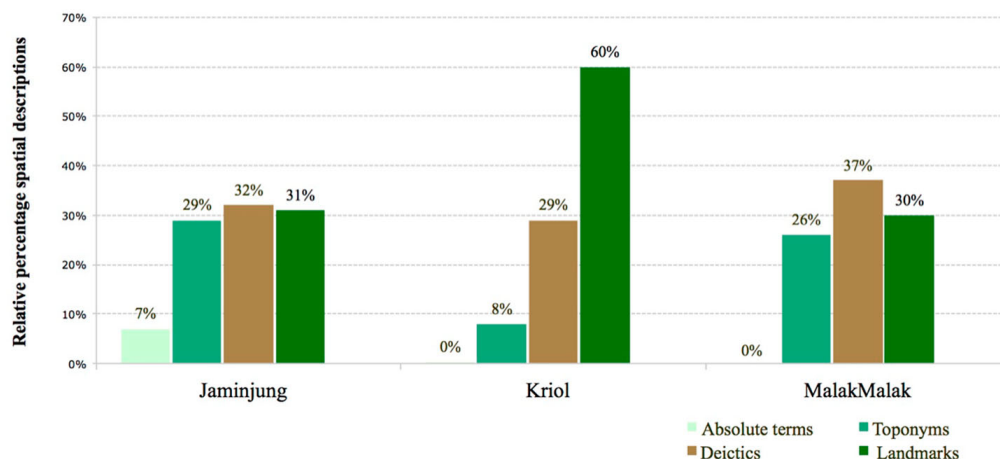
Spatial Descriptions in Discourse

Figure 4 Relative percentage of spatial descriptions in discourse. Absolute usage frequency taking into account all words in the corpus are as follows: *Jaminjung*: total spatial descriptions 4.33%, absolute 0.29%, toponyms 1.27%, deictics 1.40% and landmarks 1.35%; *Kriol*: total spatial descriptions 5.13%, absolute 0%, toponyms 0.39%, deictics 1.49% and landmarks 3.10%; *MalakMalak*: total spatial descriptions 3.78%, absolute 0%, toponyms 0.97%, deictics 1.39% and landmarks: 1.13%

descriptions. In Jaminjung, deictics, toponyms and landmarks are used in roughly equal distribution with the addition of some absolute terms. In MalakMalak deictics are used more frequently than both landmarks and toponyms. Finally Kriol shows a clear preference for landmarks over deictics and employs toponyms to a limited extent.

Example (29) is from a mythological narrative providing a typical example of the use of toponyms to recount the movements of a dreamtime ancestral being.

(29) a. *ngunanggi pi yida*
MPB **ngun-an-nggi**   pi   yi-da
     DIST-LOC-PROX.DIR   move   3SG.M-go/be.PST
     'he (the Bluetongue Lizard) went to the other side of the Daly River'
         (DH15_A02_03.162: speaker BL)
      b. *yipi Yininy Yjurrkyinnga na karrkkanggi*
     yi-pi   **Yininy Tjurrk-yinnga**   <u>na</u>   karrk-ka-nggi
     leave-move   Yininy Tjurrk-LOC   NOW   move.up-come-PROX.DIR
     'he left Yininy Tjurrk and then came right up here' (DH15_A02_03.163: speaker RP)

MalakMalak's wind-based system is restricted to events where a figure is oriented or moving towards either wind direction. As discussed above, these terms are not used in discourse encoding absolute FoR. Instead, they tend to denote times of day as in example (30) or year rather than directionality.

(30)   *pi wuta nuly tatjma wuwundunyna*

pi	wu-ta	**nuly**	tatj-ma	wu-wunduny = na
move	3PL-go/be.PST	sea.wind	hit-CONT	3SG.N-do.SBJV = FOC

'they went when the sea wind was blowing (in the afternoon)' (Birk 1974: DB_A01_03.188-189)

Examples in (31) below show the usage of toponyms and deictics in mythological (dreamtime) narratives. Place names and landmarks are sometimes accompanied by deictics[8] placing the toponyms in relation to the speaker's location or another deictic centre.

(31) a.   *barnka biyang gardbany tharriya, Gayitinginy*

DJA

barnka	biyang	ga-rdba-ny	**tharriya**
stand.up.to.be.speared	NOW	3SG-fall-PST	that.way.DIST

Gayitinginy
Gayitinginy
'he stood up to be speared there, at Gayitinginy' (Schultze-Berndt 2008: ES01_A01_01tt_0087)

ROP b.   *wi bin habum ol fam deya langa Lolebul, dijan la Katharrain*

wi	bin	hab-um	ol	fam	**deya**
1PL	AUX.PST	have-TR	old	farm	there.DIST
langa	**Lolebul**	dijan	la	**Katharrain**	
LOC	Low.Level	this + one	LOC	Katherine	

'We used to have an old farm there at Low Level. It was here in Katherine' (Sandefur & Sandefur 1982: Conversational_Kriol_Tape5_Lesson33)

MPB c.   *ngatj Mirriny Yininy ngunna pak*

ngaty	**Mirriny**	**Yininy**	**ngun-na**	pak
maybe	Mirriny	nose	DIST-LOC	sit

'maybe he (the Bluetongue Lizard) stayed there at Mirriny?' (DH15_A02_03.352)

A prominent way of expressing spatial reference in discourse in all three languages is with deictic terms as exemplified in examples in (32). They are utilized to reference previously overtly or covertly indexed places. In stimuli-based narratives not placed within the speakers' familiar environment as in the *Frog Story* (Meyer 1969), only deictics as in example (32) and unnamed landmarks as in example (33) are used as spatial references in all three languages.[9]

(32) a.   *yinthubiyang ganingam warrb burruyu malara*

DJA

yinthu = biyang	gani-nga-m	warrb	burru-yu	malara
PROX = NOW	3SG:3SG-take-PRS	be.together	3PL-be.PRS	frog

'now, he takes the frog here and they are all together' (DH10_A11_05_0229)

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[8] For Jaminjung, toponyms are accompanied by deictics 12% of the time and landmarks and deictics 4.5%; for Kriol, toponyms and deictics 25% and landmarks and deictics 7%; and for MalakMalak, toponyms and deictics 6% and landmarks and deictics 30%.

[9] Amounting to 45% and 55% respectively for Jaminjung and 30% and 70% respectively for both Kriol and MalakMalak. Absolute percentage: *Jaminjung* deictics 3.88% and landmarks 4.80% of all spatial descriptions (8.68%), *Kriol* deictics 1.18% and landmarks 2.73% of all spatial descriptions (3.91%); *MalakMalak* deictics 1.50% and landmarks 3.49% of all spatial descriptions (2.00%).

ROP   b.   *diya bin ran, en det dog bin rijimbat im hiya*

diya	bin	ran	en	det	dog	bin	rij-im-bat
deer	AUX.PST	run	and	DET	dog	AUX.PST	chase-TR-CONT

im	**hiya**
3SG	here.PROX

'the deer ran and the dog chased it to here' (DH10_A14_06_0095-96)

MPB   c.   *kina pi wutu wundut*

ki-na	pi	wu-tu	wundut
PROX-LOC	MOVE	3PL.sit.PST	DU

'they were both sitting there' (DH15_A35_02.001)

(33)   a.   *langinygi gurdij gayu wirib*

DJA

langiny-gi	gurdij	ga-yu	wirib
tree-LOC	stand	3SG-be.PRS	dog

'the dog stands by the tree' (DH10_A10_05_0125)

ROP   b.   *imin klaimap la rok holdimbat im gabarra*

imin	klaim-ap	**la**	**rok**	hold-im-bat	im	gabarra
3SG.AUX.PST	climb-up	LOC	rock	hold-TR-CONT	3SG	head

'he climbed up the rock, holding his head' (DH10_A14_06_0079)

MPB   c.   *yuendueny kina, walkyinngana tigalma yuyu*

yuendueny	ki-na	**walk-yinnga** = na	tigal-ma	yu-yu
3SG.M	PROX-LOC	stone/money-LOC = FOC	lie-CONT	3SG.M-lie.PST

'and here, he lay down on a rock' (DH15_A35_02.094)

In discourse that is not stimuli-based the prominence of place names over absolute terms is unsurprising. Places of significance are abundant and highly salient in Aboriginal culture, myth and narrative. All dreamtime beings travel along well-known routes establishing important places along the way and naming the country in the process. Additionally, since speakers are maximally familiar with the location of any significant place, their direction in relation to one another is known and consequently mentioning it can be viewed as redundant.

In addition to these culture-specific restrictions with regards to the use of absolute terms in discourse, Hill (1996: 317) has argued for the Oceanic language Longgu that its two sets of absolute terms function differently with regards to the places they refer to. While those intimately connected with the people's lives (*sea–inland*) are used to refer to directions within the land area of the Longgu, the reference points *sunrise–sunset*, on the other hand, are perceived as beyond the scope of the region and therefore refer to directions and locations outside of it. Schultze-Berndt (2006: 104) remarks for Jaminjung that the river 'system breaks down for reference beyond the drainage system which includes the territory that the speakers are familiar with'. Gooniyandi's river-drainage system, on the other hand, does not fall beyond the speakers' familiar territory, but is used to reference places far away such as Perth.[10]

MalakMalak's usage of wind-based terms is similar to that observed for Jaminjung and Longgu. The terms are of high cultural significance in denoting seasonal winds that introduce radically different lifestyles during the wet and dry seasons. Even though these same winds also blow in other areas outside of MalakMalak country

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[10] I would like to thank one of the anonymous reviewers of this paper for pointing out this usage in Gooniyandi.

its speakers only use them in traditional territory. Those speakers living in Darwin are familiar with the system but never use the absolute terms in spatial descriptions there. The same is true for the use of toponyms that are naturally geographically bound to traditional MalakMalak territory. The language's sun-based lexemes, on the other hand, are used by speakers located in- and outside of MalakMalak country and may be used to describe locations and directions outside of it as well.

Interestingly, the MalakMalak refer to places associated with the highly salient Daly River beyond their tribal boundaries with terms denoting the river's origin in the high country to the southeast (*kantjuk/menyik-en* 'upstream/throat-way') and its mouth to the west (*matjan-en* 'foot-way, downstream').[11] These are never used in any abstracted way to denote absolute directions within MalakMalak country. Their far-away location forbids it.

In conclusion, the restricted usage of absolute terms expands beyond artificial stimuli settings and into narrative and communicative discourse. I have shown that route descriptions providing stereotypical settings for mentioning overt grounds that are not the deictic centre are not often used in Jaminjung, Kriol and MalakMalak communities. When speakers give directions, they prefer using a string of toponyms that are landmark-based, inherently static and consequently more precise than absolute terms. In those rare cases where the latter are used, the ground remains unmentioned and is assumed the deictic centre sometimes via the process of deictic shift.

Culturally highly salient discourse including dreamtime and bush stories rely heavily on toponyms rather than absolute terms in spatial descriptions. The ancestral paths of the dreamtime beings are described specifically as connecting named places rather than directions without endpoints like the river drainage, and MalakMalak's sun or wind terms.

Finally, usage-restricted systems as MalakMalak's wind and Jaminjung's river drainage systems are culturally significant and break down outside the traditional lands. MalakMalak's less restricted sun-based and Kriol's unrestricted sun-based systems, on the other hand, are based on fixed locations or bearings that may function inside as well as outside familiar territory.

4. Conclusions

This paper aimed to give a detailed account of usage restrictions of absolute term systems in three Aboriginal languages namely Jaminjung, the Roper variety of Kriol and MalakMalak. All three languages have developed different strategies to denote spatial relations with absolute terms. Three contexts for use of absolute systems were identified: descriptions [1] with an overt ground that is not the deictic centre; [2] without an overt ground where the ground is always the deictic centre or where

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[11] The salience of body-part terms used to derive lexemes denoting parts of drainage systems in some languages of the world independently of one another, e.g. also German *Mündung* 'river mouth', is an interesting area of investigation well beyond the scope of this paper.

two figures of the same type act as each other's grounds; and [3] where a figure is oriented with respect to a ground. In Jaminjung, the river-drainage based terms are used to describe orientation [3] and spatial relations without an overt ground [2]. MalakMalak's wind-based terms are restricted to descriptions of orientation [3] and the language's sun-based lexemes are restricted in the same way as Jaminjung's river terms to [2] and [3]. MalakMalak furthermore makes extensive use of toponyms, including lexicalized terms denoting the riverbanks of the Daly River, that are again restricted in the same way as the language's sun-based terms to contexts [2] and [3]. Kriol's sun-based system is the least restricted and occurs in all three contexts.

I have argued that a number of cognitive and morphosyntactic features as well as cultural salience provide the tools to group some absolute term systems together and shed some more light on their usage restrictions. Those systems that are bounded (with an endpoint in the speakers' minds and landmark-based where the axes point towards a local landmark) are less restrictive; while those that are unbounded (extending beyond the edges of the map and geomorphic, where frames are transposed from an anchor) are more usage-restricted.

Both Jaminjung's and MalakMalak's restricted systems, especially those based on the wind and river drainage, are highly culturally salient and linked intricately to land and lifestyle. Kriol's sun-based system on the other hand is unrestricted and can be applied independently of landscape or lifestyle just like the English cardinal directions system. Even though MalakMalak and Kriol both employ absolute terms based on the rising and setting sun, the systems function differently in each language. While for Kriol the system is bounded and landmark-based, for MalakMalak it is unbounded and geo-morphic. This distinction is visible in the different morphosyntactic treatment and usage restrictions of the absolute terms in each language. Kriol's adverbials *sanrais/san-godan* attach the locative suffix *–said* in location descriptions and in context [1] the locative preposition *langa* precedes them when designating a location rather than a direction. This locative marking denotes the terms as bounded and perceived with a specific location—the point on the horizon where the sun rises and sets—in mind. As a result, they function in the same way as named or unnamed landmarks with fixed positions. MalakMalak's phrasal calques *miri baigama/miri tjalk* denoting the location of the rising and setting sun, on the other hand, do not allow any locative case marking, but remain unmarked in location descriptions. Consequently, they are inherently dynamic and unbounded extending beyond any point on the horizon and encoding the general direction of the sun's daily movement.

Importantly, this analysis of three languages highlights the importance of examining a language's system of absolute Frame of Reference independently and in detail to be able to understand functions and usage restrictions. While typological investigations provide insight into the variety of systems across the world's languages, they cannot sufficiently describe the more intricate distinctions within each language. I argued that what appear to be approaches of the same type—MalakMalak and Kriol's sun-based system—function quite differently regarding morphosyntactic treatment and usage restrictions.

Additionally, the use of toponyms in spatial descriptions has been largely overlooked as playing a part in an absolute FoR system. It was shown for MalakMalak that toponyms are used alongside and sometimes in favour of other types of landmark- and geomorphic FoR.

Finally, this paper adds valuable discussion points for a debate that has been aimed at expanding Pederson *et al.*'s (1998) and Levinson's (1996) original typological classification of spatial Frames of Reference. Usage-based restrictions of several parallel absolute systems within one language are grounds to further develop the typology beyond incorporating gesture (Haviland 1993, 1998), deixis (Bickel 2000; Burenhult 2008; Danziger 2003, 2010) and orientation (Terrill & Burenhult 2008). Moreover, it emphasizes the need for detailed investigations into individual languages' FoR systems to identify specialized restrictions and functions.

Abbreviations

abl	ablative case	nom	nominalizer
all	allative case	now	discourse marker
aux	auxiliary	part	participle
cm	case marker	pl	plural
cont	continuous	poss	possessive
det	determiner	prep	preposition
dir	directional case	prog	progressive
dist	distal	prox	proximal
dja	Jaminjung	prs	present
du	dual	pst	past
ds	different subject	punc	punctual
erg	ergative case	qf	quantifier
f	feminine	rdp	reduplication
foc	focus	rop	Roper Kriol
imp	imperative	sbjv	subjunctive
inal	inalienable	sg	singular
inst	instrumental case	suf	suffix
ipfv	imperfective	tr	transitivity marker
l.abl	special ablative case	1	first person
l.all	special allative case	2	second person
loc	locative case	3	third person
m	masculine	-	morpheme break
mpb	MalakMalak	=	clitic break
n	neuter	*underline*	code-switched
n*	neuter of trees		

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