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CHAPTER 3

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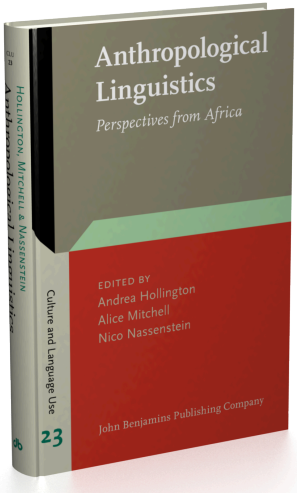

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CHAPTER 3

A cautious approach to spatial orientation in Tima

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This study investigates two subdomains within the semantic field of space among the Tima in Sudan: first, topology (and toponymy), and second, frames of reference. Like many European languages, Tima uses adpositions to indicate a goal/location and a source. Furthermore, Tima uses locative prefixes (remnants of a noun class system) to designate an area. With respect to frames of reference, we show that Tima uses a mixed system, availing of all major frames, i.e., absolute, intrinsic, and relative. The data at our disposal suggests that mobility as well as the shape of figure and ground play a role in the encoding of spatial relations in Tima, a hypothesis which needs testing with more data.

Keywords: spatial reference, Tima (Niger-Congo)

1. Introduction

Over the last few decades, studying spatial orientation in different language communities has attracted increasing attention. This interest arises from the fact that there is a close interrelation between "non-linguistic concepts and the semantics of linguistic expressions" (Levinson, 2003, p. 15) concerning spatial language and beyond. In general, understanding each other means sharing knowledge, i.e., sharing the language in its cultural setting, because, "when we communicate we communicate in a certain context, and this context shapes our utterances" (Senft, 1997, p. 2). Spatial thinking is inseparably linked to everyday activities and communication (see Levinson 2003, p. xvii), and differences in spatial thinking may lead to differences in coding of spatial expressions and their usage. Thus, the description of diverse patterns in spatial thinking/spatial language "may reveal fundamental properties of human thought" (Brown, 2015, p. 89).

A major division in spatial language is made between non-angular (contiguous) relations between FIGURE and GROUND and angular relationships (coordi-

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nate systems).[1] With respect to the latter, scholars typically differentiate between absolute, intrinsic, and relative systems (see again Levinson, 2003; see also Figure 3.1 based on Levinson, 2003, p. 66).

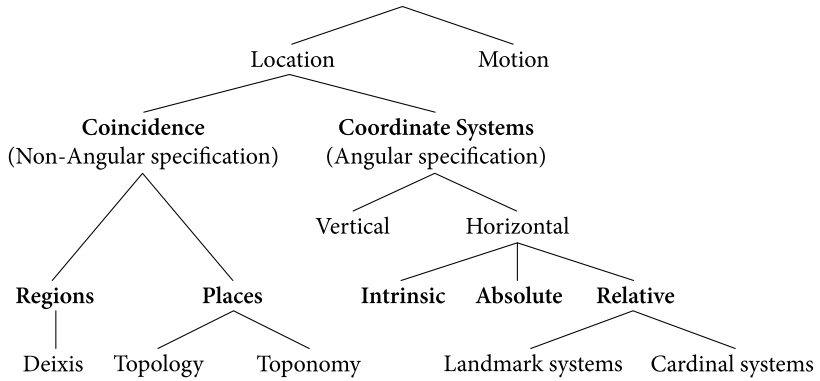


Figure 3.1 Major semantic subfields in spatial language (Source: Levinson, 2003, p. 66)

The intrinsic frame of reference is considered to be object-oriented. That is, the description here is "determined by the 'inherent features', sidedness or facets" (Levinson, 2003, p. 41) of the GROUND; e.g., "He's in front of the house" depends on features of the house itself (for the relevant graphic see Levinson, 2003, p. 40). In the absolute system, either a relationship is described by cardinal directions or by involving features of the environment, i.e., it is an environment-centered system (Levinson, 2003, p. 55). Relative systems involve the speaker/viewer in the description of the relation between FIGURE and GROUND, with the speaker being the ANCHOR (see Levinson, 1996, p. 140 and passim; see also Danziger, 2010). Broadly speaking (and ignoring the vertical dimension), relative systems are based on a left/right and front/back distinction (for an extensive discussion on the complexity of this system and its subtypes see Levinson, 2003, Chapter 3.4.2.2).

Danziger (2010) adds a further type to the systems, namely the direct frame of reference (see Table 3.1). This type "distinguishes binary locutions with a speech participant as Ground/Anchor [...] from 'Object-Centered' binary locutions in which Ground/Anchor is not a speech participant [...]" (Danziger, 2010, p. 167). As she further explains, the ANCHOR "can be defined as that element in the scene

1. For a summarizing discussion on spatial expressions see Brown (2015). For a comprehensive work on 'Language and Space' the interested reader is referred to Levinson (2003). FIGURE and GROUND (see Talmy, 2000, who we follow with regard to the terminology) correspond to RELATUM and LOCATUM, preferred by e.g., Skopeteas et al. (2006).

which, if rotated, falsifies the description" (Danziger, 2010, p. 174). Table 3.1, based on Danziger (2010, p. 172), provides a useful overview.

Table 3.1 Frames of reference (source: Danziger, 2010, p. 172)

	Allocentric	**Egocentric**
	Anchor is not a speech-situation participant	Anchor is a speech-situation participant
Ternary	**Absolute**	**Relative**
Anchor is not Ground	*The milk is at the east of the kettle.* (Or: *The milk is at the east of you.*)	*The milk is to the right* of the kettle.* (Or: *The milk is to the right* of you.* *from the speaker's perspective
Binary	**Object-centered**	**Direct**
Anchor is (part of) Ground	*The milk is at the spout of the kettle.*	*The milk is in front* of me.* *with reference to the speaker's own front

Being inspired by the diversity of spatial language (see e.g., Levinson, 2003; Levinson & Wilkins, 2006; and references therein), the present authors want to contribute to the description of systems in the world's languages by focusing on a language from the African continent, Tima. Our starting point is Levinson's analysis of the spatial domain, as described above.

The data we took into account partly come from single elicited sentences, the majority of which were elicited with the help of photos taken in the area between 2007 and 2012. Furthermore, certain tasks of Skopeteas et al. (2006) proved relevant for this topic.[2] Last but not least, we considered staged recordings from different Tima speakers.

The core of this paper is structured as follows: After giving some useful background information on the language in Section 2 (for more information on the social background see Veit & Schneider-Blum, this volume, or Meerpohl 2012 for a detailed social anthropological study on Tima society), we dedicate 3 to a discussion of topology. That is, in 3.1, we look at nominal prefixes which play a role with regard to Tima spatial expressions, before dwelling on the prepositions marking GOAL and SOURCE in 3.2. Though locative prefixes and prepositions are an inter-

2. The description of the photos as well as the chosen tests from the *Questionnaire on Information Structure: Reference Manual*, designed by Skopeteas et al. (2006) were conducted with our main Tima consultant, Hamid Kafi Daldum, in Khartoum. The sentences elicited through photo stimulation were cross-checked by other Tima speakers under the supervision of Hamid Kafi Daldum.

esting aspect of spatial language in and of themselves, analysis of these linguistic forms is also essential for understanding derived spatial expressions, which we will introduce in 3.3. In Section 4, our focus shifts to the frames of reference as described by Levinson, 2003, i.e., absolute, intrinsic, and relative frames. We will see how these frames are realized in the Tima language. In Section 5 we summarize our findings.

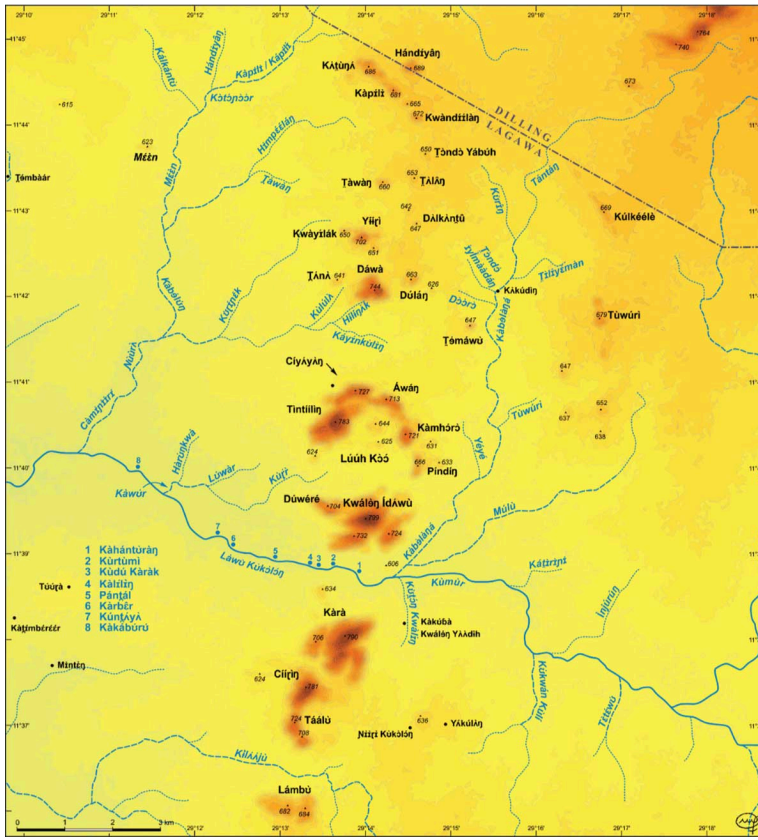
2. Background information on Tima

Tima is a language spoken by roughly 7,000 people in the Nuba Mountains in the Sudan (see Map 3.1 for the homeland of the Tima, kindly provided by Monika Feinen, African Studies, University of Cologne). The language, together with the more closely related languages Katla and Julut, belongs to the Katla group (see e.g., Tucker & Bryan, 1956, p. 67) of the Niger-Congo phylum.

Here we briefly describe the grammatical profile of Tima. As already outlined in more or less detail in various publications by the present authors (e.g., Alamin, 2012; Schneider-Blum, 2013a as well as Dimmendaal, 2014), Tima "has a restricted system of noun-class prefixes synchronically, but internal reconstruction and comparative evidence show that this is due to various restructuring processes historically" (Dimmendaal, 2014, p. 103). As we will see later (Section 3.1), locative prefixes are but one such piece of evidence. Apart from locative nouns, Tima generally exhibits a singular/plural distinction and uses special marking, i.e., *b(V)-*, for abstract nouns derived from adjectives. Further attested is the derivation marker *d(V)-* which transmits the notion of manner, e.g., in *(t̪àmáá) dùmùrík* 'Tima (language)', literally '(the language) like Tima/the way of Tima'.

The verb is the most complex constituent in Tima. Verbal agreement is sensitive to person and number, but not to noun classes/groups. Person and TAM markers may precede the root, while different derivation markers, pronominal object, subject and oblique argument markers may follow the root. The ventive marker *-Vŋ*, as one of several derivation markers, is of particular importance for this contribution, since it plays a role with regard to spatial relations, as will become obvious in the course of the paper. Suffice here to say that "[t]he ventive marker indicates a movement towards the deictic center, i.e., the speaker" (Alamin et al., 2012, p. 19).

Word order tends to be SV/AVO for sentences uttered in isolation with S/A (most agent-like arguments in intransitive vs. transitive clauses) also representing the attentional center (see Himmelmann & Primus, 2015) of the utterance. If a change of attentional center occurs, or with constituents receiving focus marking, word order can alter to OVA, OAV or AOV. Whenever the O argument (i.e., the



Map 3.1 Lúmúrìk 'the Tima area' in the Nuba Mountains of the Sudan

most patient-like argument in a transitive clause) precedes the A argument, the latter receives ergative marking, which means A is then preceded by a homorganic nasal *N*= (consider Example (3)).[3] Otherwise, neither A nor O are marked for case but determined by word order. Semantic roles such as INSTRUMENTAL, BENEFICIARY, GOAL, and SOURCE are all indexed by a proclitic, as will be discussed in Section 3.2, with special consideration of GOAL and SOURCE markers.

3. Dimmendaal (2009) was the first to describe ergative marking in the language of Tima and to prepare the ground for further research. Since then, several more papers on the Tima ergative system, among them Schneider-Blum & Hellwig (2018) and, on the origin of ergativity, Casaretto et al. (2020) have been published.

3. Topology (and a glance at toponymy)

The first subdomain in the field of locative expressions which we consider is that of topological relations. Tima has basically two kinds, namely locative nouns and adpositions. Combinations of these with a lexical (though sometimes opaque) base give rise to even more spatial expressions.

3.1 Locative prefixes

The three existing locative prefixes *l(V)-*, *y(V)-* and *w(V)-*, "reminiscent of the locative classes in Bantu" (Dimmendaal, 2014, p. 121), replace the singular or plural number prefix, as illustrated in Table 3.2 (based on Alamin et al., 2012, p. 16 and Dimmendaal, 2014, p. 112; for a detailed discussion on locative prefixes see Dimmendaal et al., in preparation).

Table 3.2 Tima locative markers

Loc	Function	English equivalents	Example	Source noun
l(V)-	locative (area)	(at/in)	*lɘ́-bààbɔ̀*	*kɘ̀-bààbɔ̀*
			'at/in the graveyard'	'SG-graveyard'
y(V)-	locative (exact)	at/on	*yà-dìí*	*kì-dìí*
			'at/on the leg'	'SG-leg'
w(V)-	locative (under)	under/in/by	*w-ʌ́cùk*	*k-ʌ́cùk*
			'under the baobab'	'SG-baobab'

Some examples serve to illustrate the use of locative nouns as compared to a non-locative form which is given below the translation line of each example. The roots are bound morphemes.

(1) *kùlʌ́ y-ʌ̀húnèn ŋ̀kíyʌ́ l-ɔ́ɔ̀*
yesterday PL-woman COP LOC-family
'yesterday, the women were at home' (08.04.09, 2_06–05)
cf. *k-ɔ̀ɔ́* 'SG-family'

(2) *l-úmúrík à-mmál ʻḿ-pślá=ná ḿbɛ́ɛ̀h*
LOC-Tima STAT.SG-EMPH:good P-want=ERG1SG very
'Tima (area) is wonderful (and) I love it terribly' (20200205_13)
cf. *kù-múrìk* 'SG-Tima (i.e., a Tima person)'

(3) *y-ànn̰ɔ́ŋ=è díṯʌ̀k ŋ̀=k-ʌ̀húnén=ʻnʌ́ yà-dìí*
PL-rattle=FOC.PL tie:AP ERG=SG-woman=DEM.PROX LOC-leg
'this woman tied *rattles* to the leg' (12.04.09–02–10)
cf. *kì-dìí* 'SG-leg'

Figure 3.2 Stimuli for Examples (3) and (4)

(4) *k-úy* *k-àmhàhóŋ=ˈlí* *ó-ɓɔ̀ɔ̀ yà-dàwún*
SG-locust SG-Kamhahung=FOC.SG P-put LOC-arm
'the locust called *Kamhahung* is lying (put) in the hand' (12.04.09–08–09)
cf. *kɨ-dàwún* 'SG-arm'

(5) *ìnìín=ˈé* *kúllú ì-díyáŋ* *wɔ̀-rɔ̀kwáy* *ˈkáhàtùn=í*
1PL.EXCL=FOC.PL all PL-walk:VENT LOC-passage Kahatun=SEL
'all of us (excl.) came by the passage of Kahatun'
(310108_31_AdlaanWayExplaining 022)
cf. *kʊ-rʊkway* 'SG-passage'

There are certain body part terms (see also below in Section 3.2) which serve as a preferred base for locative prefixes in the construction of place names.[4] These are *káàh* 'head', *kíɲɛ̀* 'mouth, *kùdú* 'vagina' and *kúùh* 'bone', though their meaning has been metaphorically extended when derived for the locative, and many compound expressions of which the first component is a locative noun are no longer analyzable from a semantic point of view (see Schneider-Blum, 2011, p. 246f.).

4. For literature on body part terms as the main source for spatial expressions see Levinson 2003 and references therein, e.g., Svorou 1994; Heine 1997.

Toponymy, together with topological and deictic expressions, form the domain of non-angular specifications, and will not be considered in depth here. As our data reveal, place names in Tima are not formed differently from ad hoc compositions of locative expressions. Over the course of time, names may only have lost their full transparency. Consider the toponyms in Table 3.3:

Table 3.3 Tima toponyms

Toponym	Gloss
líŋé ˈkwáɲòk	'lit.: at the mouth of Kwanyuk'; worshipping place of the Gwale between Raawa Hill and the 'White Mountain'
lááh kútˈún	'lit.: on the dark head/top'; the peak of the mountain *Tìntíílìŋ* (see *Map 3.1*)
lúúh kɔ̀ó	'lit.: inside the family'; name for the Tima center (see *Map 3.1*)
wúdú kɔ̀n̪tɨ́l	'lit.: at the foot of Kothol'; place name in the area of *T̪ɨ̀mʌ̀*, north-west of the mountain *Tìntíílìŋ* (see *Map 3.1*)

The noun *kánn̪tɔ̀* 'inside' is also found in the domain of toponymy and designates a formation of hills: *kánn̪tɔ̀ yálɔ̀ŋ* 'lit.: in the mountains' is the name for a group of hills in the Tima area (see Figure 3.3).

Likewise, in two of the cardinal directions, namely *líŋɛ̀ɛ̀* 'east' and *líhì* 'west', further discussed in Section 4.1, we find one of the locative markers, namely *l(V)-*.

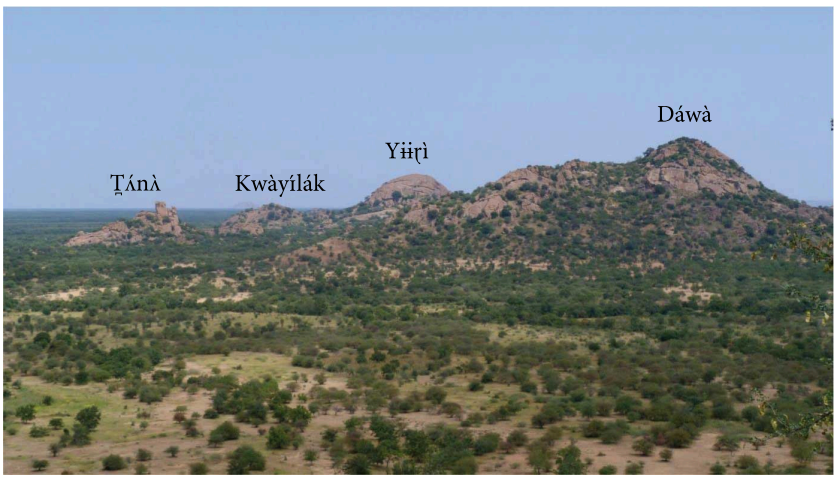


Figure 3.3 Kánn̪tɔ̀ Yálɔ̀ŋ: T̪ʌ́nʌ̀, Kwàyílák, Yɨ́ɨ́rì, Dáwà

3.2 Prepositions

Dimmendaal (2015, p.116f) characterizes the use of adpositions in African languages as follows:

> Most African languages [...] use either prepositions or postpositions (or sometimes both, as in linguistic areas where verb-initial and verb-final languages border on each other). Such adpositions are commonly derived from body part terms in languages such as Hausa (Chadic), Swahili (Bantu), and Maasai (Nilotic).

For Tima, postpositions are not attested. Prepositions differ from locative noun markers in that they are clitics preceding the noun phrase (rather than prefixes which are part of the noun itself). Among the Tima prepositions, and not further considered here, we find a comitative and an instrumental marker (which are assumed to be historically related), as well as a benefactive preposition (see Dimmendaal & Schneider-Blum, accepted). Rather, for the topic of this paper, goal and source markers are of importance. Thus, we confine our discussion to these two prepositions: *a*=, marking the source, and an underspecified vowel *V*=, marking goal, recipient, and location. An etymological source for the two prepositions cannot be determined, but in combination with body part terms, further spatial expressions are created which are discussed in 3.3.

The source marker a=

Example (6) shows the source marker in its prototypical function, i.e., marking the source in combination with a verb of motion. The clitic is found with the question word *nímɛ̀* 'where' as well as with the place name *kàrtóòm* 'Khartoum'.

(6) *à=nɪ́ˈmɛ́ nà-díyáŋ=á? – à=kàrtóˈőm=á*
source=where PL-walk:VENT=FOC SOURCE=Khartoum=FOC
'where do you (pl) come from? – from Khartoum' (2011_06_30_4_19)

In (7), the proclitic not only occurs after the verb *dɔ́ɔ̀* 'stand up, start' to indicate the starting point of a movement, but also after *tɔ́ɔ̀* 'go through, pass' in order to make clear that the movement went beyond the place being passed through.

(7) *wɔ̀rt̪ʂmáádʂh án-dɔ̀ɔ̀ à=l-úmúrík án-tɔ̀ɔ̀ à=dílíŋ*
SG:man 3PRF-stand.up SOURCE=LOC-Tima 3PRF-pass SOURCE=Dilliny
áyìn kàrtóòm
towards Khartoum
'the man left (lit.: went from) Tima via Dillinj to Khartoum' (15.03.10_07_08)

Further examples are presented to illustrate the range of meaning of the source marker. In (8), the source marker still indicates that a FIGURE (i.e., the 'flour') leaves its GROUND (i.e., the 'grinding stone').

(8) *k-ʌ̀húnén=nʌ́ y-ámɔ́h='ɛ́ ɔ́-t̪ɔ̀ɔ̀l á=kì-t̪í*
SG-woman=DEM.PROX PL-flour=FOC.PL P-clean SOURCE=SG-grinding.stone
'this woman is brushing the flour from the grinding stone' (12.04.09–06–08)

Figure 3.4 Stimuli for (8), (9), and (10)

In (9), the figure, which would be 'water', is not explicitly mentioned but understood from the context.

(9) *í-mìì=yɛ̀ mɔ́wàk á=tàbɔ́rɛ́ɛ̀, […]*
PL-goat=FOC.PL drink:AP SOURCE=SG.watering.trough
'the goats are drinking (water) from the watering trough, […]' (16.04.09–16–02)

The source marker, as demonstrated with (10), may indicate a material source:

(10) *dɔ́lá=ná à=k-ɔ̀yɔ́hɔ́ ɔ́-kɔ̀yɔ̀*
SG.roof=DEM.PROX SOURCE=SG-reed:FOC P-do
'this roof is made from reeds' (03.03.07–2–144)

Also attested is a partitive notion (cf. examples from Krongo in Reh, 1985, p. 149). The prepositional phrase *áyòlɓá* in (11) translates literally as 'from the feathers'. In former times, Tima soldiers decorated themselves with feathers, which is still practiced when wrestling or dancing (see Figure 3.5). Linguistically, we are dealing here with synecdoche, in which the 'feather' as a part stands for the 'soldier' as the whole.

(11) *dɔ́ɔ́-wáá ɲ́=írbà hílt̪-ík á=y-ɔ̀lɓá í='íhwáá=ná*
stand.up-INS ERG=Irba send-CAUS SOURCE=PL-feather DIR=people=DEM.PROX
'i=pínʌ́=yí
DIR=PRON3SG=SEL
'then Irba sent (one or two) of his soldiers'
(280117_10_Hamid_Clandividing 87)

Figure 3.5 Wrestling decoration

Well attested in the world's languages is the use of a source (or ablative) marker as the "marker of standard noun phrases in comparative constructions" (Heine & Kuteva, 2002, p. 30, with examples from Latin, Bulgarian, Tibetan, Turkish, and Aranda). They come to the conclusion that "this grammaticalization appears to be an instance of a more general process whereby spatial concepts are used as structural templates to express the standard of comparison" (Heine & Kuteva, 2002, p. 31). In Tima, too, the source marker occurs in comparisons, as in (12) and (13).

(12) *k-ǒmbɔ́yɔ́ŋ à-lìl=à=t̪àŋ á=kɔ̀-ɽɔ̀lɛ̀*
SG-wasp.SP STAT.SG-cold=SOURCE=LOC SOURCE=SG-wasp.SP
'the wasp Kumboyong is more harmless (lit.: colder) than the wasp Kerhele'[5]
(08.04.09, 2_03–12)

(13) *kɔ́ɔ̀=lɛ̀ɛ́y ì-cáá l-úmúrìk ŋántùn=í*
walking=LOC1PL.INCL PL-go.INS LOC-Tima present=SEL
à-màl=à=t̪áŋ á=cú=wééŋ ì-cáá tɨ̀ɨ̀rɨ́
STAT.SG-good=SOURCE=LOC SOURCE=SG=DEM.REF PL-go.INS formerly
'our journey to the Tima area went better than the first time' (17.02.08–26)

Unlike *l(V)*-derived nouns which may indicate a goal/location without the presence of a preposition (as in (13); see also Example (1)), nouns which are not derived with the locative demand a preposition, i.e., the goal marker, as discussed next in similar contexts.

5. A fact which one of our team had to learn the hard way during fieldwork.

The goal marker V=

The goal marker, glossed here as DIR (following the glossing choice made for previous publications on Tima), is a homorganic vowel whose quality is determined by the first vowel/glide of the noun it is precliticized to. The marker is used to indicate the goal of verbs of motion (including recipient, but not the beneficiary), the location with stative verbs/copulae and to mark modifying nouns in a possessive relationship (in which context Dimmendaal 2014, p. 114 uses the term "genitive linker" with regard to his Example (36)). Last but not least, the goal marker may also have a partitive function (for an overview see Table 3.4).

When explaining the route from a place in the Tima center, *lúúh kɔ̀ó*, to his home (as the goal), Adlaan says in his description:

(14) *àààh, ì-cí ɔ̀=ˈdóláŋ*
aaah PL-go DIR=Dulang
'aaah, we go to Dulang (i.e., a small hill)'
(310108_31_AdlaanWayExplaining 036)

Table 3.4 Meanings of the goal marker

Marker	Semantic role	Example	More examples
V=	goal	*àyí ɔ́=kàrtóɔ̀m* go DIR=Khartoum 'go to Khartoum'	(14), (15), (16)
	location	*ŋ̀kɔ́ ɔ̀=kwálɔ́kàyì* COP DIR=trap:PRES 'it is in the trap'	(17)
	possession	*kábɔ́l ɔ́=↓kɔ́rkɔ́yɔ̀* leaf DIR=Ind.obl. 'leaf of Indigofera oblongifolia'	(18)
	partitive	*àŋ-kɨ́dɪ́t̪áŋ ì=ìhán* 3P:PRF2-fall:LOC DIR=eggs 'it/they laid eggs'	(19)

The goal may also express the purpose of an action (cf. the grammaticalization path in Heine & Kuteva, 2002, p. 247 Purpose < Infinitive). The Tima construction with the preposition precliticized to the verbal noun *kɔ̀hààlɔ́l* 'grazing' is comparable to infinitival constructions in German with 'um zu' or in English '(in order) to'.

(15) *c-íbɑ́=ˈwééŋ ɨ́=kɨ̀-ŋɑ̀wúŋ ìhìnɑ́ yàyà ó=kòhààlɨ́l*
SG-child=DEM.REF DIR=SG-hyena PRON3PL go.repeatedly DIR=grazing
'that child of the hyena, they (i.e., hyena and lion) go to graze (the cows)'
(010207_Jenge_LionHyena 017)

Recipients in Tima are marked differently from beneficiaries. While the latter receive the applicative marker *II=* (not further considered in this contribution, but see (19)), the former are flagged by the goal marker. The oblique argument is cross-referenced on the verb by a pronominal locative clitic (here: *=yáŋ*). Proper names are treated like any other noun in this respect:

(16) *í-káh-í=yáŋ=nìn y-àn hòwán ù=t̪ùt̪úŋ*
PL-give-TR=LOC=1PL.EXCL PL-thing dry DIR=Thuthung
'we gave money to Thuthung' (2012_02_20, 1_16)

A locative meaning, a possessive relationship and a partitive notion of the goal marker are illustrated in the following Examples (17)–(19).

(17) *kù-ˈdùléh=lí túh-ùk ù=kù-dùwɑ̀*
SG-neck.shaped.calabash=FOC.SG hang-CAUS DIR=SG-pole
'the neck-shaped calabash is hanging on the pole' (16.04.09–16–09)

Figure 3.6 Stimuli for (17) and (18)

(18) *kɨ̀-címbɑ́rí=lí kɔ́lɔ́ɔ̀l kì-dìí ó=t̪ò-ròmbîl*
SG-child=FOC.SG steer SG-leg DIR=SG-car
'the child is steering the wheel (lit.: foot/leg) of the car' (13.04.09–02–09)

(19) *kúŋ ˈkwáŋ máá-dɨ̀ŋɑ̀ɑ̀ŋ=íí=nìn, ɨ́=ɨ́-hɑ̀ŋkɔ̀réŋ=ɛ́ɛ́*
SG:thing 2SG:OPT-give:VENT=APP=1PL.EXCL DIR=PL-bed=ADD
'and you may bring anything for us (excl.), e.g., beds'
(01.10.07–09 Thambosha_TT: 19)

3.3 Further spatial expressions

As indicated above and sketched in the contribution on 'Finding your way in Tima' by Alamin et al. (2012, p. 18), body parts serve to a considerable extent as a source for spatial expressions in this language. However, body part terms can only be used as spatial relators when combined with one of the two prepositional clitics described above or when prefixed by a locative marker and sometimes only when both the locative marker and the clitic is present. Thus, *céèn* 'face', *kíŋè* 'mouth', *káàh* 'head', *kúùh* 'bone', *kùdú* 'vagina' and *kìdîi* 'back' all give rise to relational concepts. They are the ones which form more abstract notions (see Table 3.5 for a number of relational expressions). Further nouns also serve as source terms, namely, *kìhí* 'place', *kɔ́ɔ̀* 'walking' and *kántə̀* 'inside'. Two such locational nouns (*yántə(V̀)* 'inside'; *yúùh* 'inside of') are combined to yield the notion of 'in the midst of', i.e., *yántì yúùh* (cf. German 'mitten unter'). Last but not least, Tima has several adverbials occurring in topological expressions, some of which seem to be derived, though their source remains opaque.[6] These are *mètén* 'close, near', *ɲ́cér* 'aside', *ǹtàlí* 'in front' *tòʔàŋ* 'high, up' and the bound roots *-tìín* 'inside' and *-twááɽ↓í* 'outside'.

The following examples illustrate the range of expressions which result from the various combinatorial possibilities. Example (20) is a verbless utterance, displaying the source marker and two of the locative markers combined.

(20) *ká=á=l-úùh=ʌ́=ʌ̀ŋ,* *à=yéŋè=wá*
NEG=SOURCE=LOC-bone=FOC=NEG SOURCE=LOC:mouth=FOC
'not from inside, from the mouth (i.e., lip service)' (08.04.09, 2_06–23)

Example (21) contains not only the source marker *a=* (with the phrases *ákʌ́cúk* and *áwùdú kùrtú*) and the goal marker *V=* (with *ɔ́làbà*), but is also a good example of the use of the ventive marker *-(V)ŋ* (on both verbs *àŋkídìkíŋ* and *àntɔ́ɔ̀ŋ*). The ventive marker plays a certain role with regard to spatial orientation – as will be elaborated in the section on frames of reference – and is the only such marker on the verb. It specifies the direction of a movement towards the deictic center, i.e., the speaker. Marking verbs for ventive in most cases is optional (as in (21)), but by relating the movement to the speaker, the utterance gains credibility. Thus, ventive marking enters the field of evidentiality.

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6. Derived adverbials in Tima are based on nouns preceded by the instrumental marker *N=*. Consider e.g., *céèn* 'face' and the derived adverb *ɲ̀céèn* 'immediately'. Generally, there is no noun with an initial nasal in its citation form. Thus, e.g., *ɲ́cér* 'aside' and *ǹtàlí* 'in front' are presumably derived adverbials with an unknown source.

Table 3.5 Relational expressions

Source	Engl. gloss	Relational expression	English gloss
céɛ̀n	face	*álíyéɛ̀n*	in front of
káàh	head	*láàh*	on, on top of
kánn̰ɔ̀	inside	*yánn̰(V̀)*	inside, on, under, through
kìdîì	back	*ál↓ éédîì*	behind
kíŋɛ̀	mouth	*líŋɛ̀*	at/on
kìhí	place	*álíhì* *náhì/ǹn̰áhì*	under, underneath, lower down; underneath
kɔ́ɔ̀	walking	*àlàkɔ́ɔ̀*	behind
kùdú	vagina	*wùdú*	at the foot of, beside
kúùh	bone	*yúùh* *lúùh*	inside of inside (area)
mɛ̀n̰tɛ́n	close, near	*mɛ̀n̰tɛ́n* + DIR=*X*	next to X
ǹcér	aside	*ǹcér* + SOURCE=*X*	at the side of, beside
ǹn̰àlí	in front	*áyìnn̰álí(ná)* + DIR=*X*	in front of
-n̰ìín	inside	*ínn̰ìín* *ánn̰ìín*	inside (directional) from inside
tòʔàŋ	high, up, on	*òtòʔàŋ* *átòʔàŋ*	upwards above, over, upper
-twááɾ'í	outside	*òtwáá'ɾí* *átwáá'ɾí*	outside (directional) from outside

(21) *k-ádìŋká'díŋ àŋ-kídìk-íŋ á=k-ʌ́cúk àn-tɔ́ɔ́ŋ*
SG-ball 3PRF-fall:CAUS-VENT SOURCE=SG-baobab 3PRF-pass:VENT
à=w-ùdú kù-rtú àŋ-kídík=á=n̰áŋ ɡ́=làbà
SOURCE=LOC-vagina SG-house 3PRF-fall:CAUS=SOURCE=LOC DIR=LOC:well
'the ball rolled from the baobab past the house into the well (speaker is at the well)' (15.03.10_06_01)

In Example (22), taken from some turn-by-turn directions, a preposition precedes a locative noun (see also (7) above).

(22) *à-kàn̰àm à=là-kwán kúlúl à-díík …*
2SG-go.out SOURCE=LOC-opening Kulul 2SG-walk
'you leave the Kulul opening and walk …'
(310108_31_AdlaanWayExplaining 005)

Examples (23) and (24) illustrate the use of the bound root *-t̪ìín* 'inside', in (23) precliticized by the source marker, in (24) by the goal marker. Consider in (23) again the use of the ventive marker, indicating that the speaker is outside the house.

(23) *kì-bɛ̀ɛ́y=nà kát̪ám-ʊ̋ŋ ꜜá=t̪íín=ꜜʌ́ àn-dʊ̋ʊ̋l*
SG-person=DEM.PROX go.out-VENT SOURCE=inside=FOC 3PRF-stand:MV
wù-dú k-áyírà
LOC-vagina SG-gate
'this person having left from inside is standing next to the gate'
(16.04.09–16–10)

Figure 3.7 Stimuli for (23) and (26)

(24) *íyìk=t̪áŋ í=t̪ìín*
enter:CAUS=LOC DIR=inside
'put it inside' (07.04.09_15–27)

The relational *ɲcɛ́r* 'aside' triggers the source marker. Note also that the oblique argument, i.e., *át̪ɔ̀ndɔ̀*, is cross-referenced on the relational expression by the locative pronominal *=t̪áŋ*.

(25) *ìbʌ̀rímbʌ́rí ŋ̀kíyʌ́ ǹ-dálá ɲcɛ́r=á=t̪áŋ á=t̪-ɔ̀ndɔ̀*
children COP P-play aside=SOURCE=LOC SOURCE=SG-road
'there are children playing at the roadside' (20190108_HamidPearFilm 012)

By way of contrast, the relational *mɛ̀t̪ɛ́n* 'close, near' demands the directional marker if the ground is to be specified.

(26) *ìmìní í-dúk=é mɔ̋ɔ́k íídì mɛ̀t̪ɛ̀n=yáŋ ù=kù-dùŋkùdúŋ*
PL:small PL-calf=FOC.PL drink PL:water close=LOC DIR=SG-granary
'the calves are drinking water beside the granary' (12.04.09–03–01)

In (27), source as well as goal are expressed.

(27) *ò-kó'né=ṯáŋ=íí kòṯàyíl y-ʌ́cúk á=nʌ́hí ì=c-ɔ̀ɔ̀rɔ́*
P-help=LOC=APP collecting PL-baobab SOURCE=down DIR=SG-basket
'[...] and helped him picking up/collecting the baobab fruits from the ground into the basket' (20190108_HamidPearFilm 014)

With these illustrative examples we leave the domain of non-angular relations and move to that of angular relations.

4. Frames of reference

In this section, we analyze the Tima data in terms of the frames of reference (building on Levinson, 2003) introduced in the introduction. In three subsections we consider the absolute (environment-centered), the intrinsic (object-centered) and the relative (viewer-centered) frames of reference.

4.1 Absolute frame of reference

Characteristic for the absolute frame of reference is that the anchor differs from the ground and does not participate in the speech situation (see Table 3.1 in the introduction). In Tima, two spatial concepts fall under the absolute frame of reference (as one of the two ternary frames). This is on the one hand cardinal directions, which the Tima refer to with the idiomatic expression 'the four roads' (see Example (28)), and on the other hand landmarks/regions in the area.

(28) *ì-yák-ò̀k=à=ṯáŋ=nɛ̀ɛ̀y ìndìʔíl á=y-ɔ̀ndɔ́ɔ́nɔ́*
PL-gather-CAUS=SOURCE=LOC=1PL.INCL all SOURCE=PL-road:DEM.PROX
ɲ=ìhálɘ́m=í
INS=four=SEL
'so we all come together from the four roads (i.e., from all directions)'
(240108_35_XX_Dance 006)

As for these four roads, the cardinal directions, we find *dò̀kwààlí* 'north', *líŋɛ̀ɛ̀* 'east', *dò̀kò̀mál* 'south', and *líhì* 'west'. With more or less semantic transparency, they are compositional terms. For instance, *líŋɛ̀ɛ̀* 'east' is etymologically related to *kíŋɛ̀* 'mouth', and *líhì* 'west' is related to *kìhí* 'place' (see Table 3.5 in the previous section). Note the locative marker *l(V)-* with both of them. The terms for 'north' and 'south' both contain the manner marker *d(V)-*. While the base of *dò̀kò̀mál* contains the root *-mal* 'good', the base of *dò̀kwààlí* is opaque.[7] As is not uncom-

7. Cf. also Alamin et al. (2012, p. 30) on *tai* 'right, south' in Keyo, a Kalenjin language of Southern Nilotic; Mietzner (2012, p. 168), in turn, mentions "*kùr kús* 'the right place' for 'South'" in

mon cross-linguistically (see Dimmendaal & Rottland, 1996), these four terms are polysemous (see Table 3.6), that is, they also play a role in other frames of reference, as we will show later.

Table 3.6 Cardinal directions

Toponym	Gloss
dòkwààlí	'north, left'
líŋɛ̀ɛ̀	'east, up'
dòkòmál	'south, right'
líhì	'west, down'

Some examples from our text collection illustrate these terms when used for cardinal directions. Usually, the terms are chosen in that sense when relating hills to each other, as is the case in (29).

(29) *kwálʂŋ=yáà kɔ̀-tɛ̀ʔɛ́ŋ dòkwààlì ɔ̀=kàmhɔ́rɔ́=yí híndíng*
SG:mountain=DEM.DIST SG-small north DIR=Kamhoro=SEL Hinding
dàŋ=ʌ̀ k-ʌ́hù
like=FOC SG-name
'that small hill to the north of Kamhoro is Hindiŋ' (23.10.07_22)

In (30), we can observe the source marker (see Section 3.2) precliticized to *líŋɛ̀ɛ̀* 'east'. The 'east' customarily also stands for the capital Khartoum, which in fact is north-east of the Nuba Mountains.

(30) *ìhwáá=nà dí'yáŋ=t̪ɛ́ɛ́y kùhùnàŋ à=lìŋɛ́ɛ̀=ná*
people=DEM.PROX walk:VENT=LOC1PL.INCL now SOURCE=east=DEM.PROX
'the people (who) came to us from the east (i.e., from the city)'
(15_AhmedKurmaadi 046)

In (31), we find both, *líhì* 'west' as a cardinal direction, and *t̪àwàŋ*, i.e., a place in the area of the neighboring ethnic group of the Tabaq, as points of orientation.

(31) *dámàk ì-cí ʊ́-kòdʊ́ ɲ=ìhwáá='ná líhí ì-hílt̪-ík ɔ̀=t̪àwàŋ*
then P-go P-take ERG=people=DEM.PROX west P-send-CAUS DIR=Thawang
'[…] then the people in the west go and take it and send it to Thawang (a place even further to the west belonging to the Tabaq area)' (13_AliTia_4 057)

her paper on spatial relations in Nilotic. Thus, the connection between the value-expressing notion of 'right, good' and the cardinal direction 'south' is not unique to Tima; nevertheless, we can only speculate about the reason for this association.

The 'west' in Tima traditions plays a special role in that all the words are said to spread from the holy place *Áwáng* (see map) to the west, which is what Ali Tia in (31) is referring to. Also, a certain ceremony which in the old days was performed to stop epidemics included throwing prepared sticks into a place in the west of the Tima area, called Hurul. That is, in former times all the evil was sent to the west.

In general, people prefer to use well-known landmarks for orientation in the Tima area. In his turn-by-turn directions, referred to earlier in this paper (see Examples (5), (14), and (22)), Adlaan uses 17 different place names and other landmarks when explaining the best way to his home area. Cardinal directions, on the other hand, do not occur in his description. Characteristic for the Tima area is a big river which divides Tima into a bigger northern and a comparably smaller southern part, with the Tima center, *lúúh kɔ̀ɔ́*, being north of the river (see Map 3.1). When locating the big fig-mulberry, *kùdú kúúdúh*, which is an ancient meeting place (see Figure 3.8), the speaker did not use the relevant cardinal direction, for instance, but said it is 'on the field side' of the river (comparable to German 'stadtauswärts' used a lot by Cologne residents when giving directions). If a FIGURE were to be located on the northern side, the appropriate term would translate as 'the center side' (comparable to German 'stadteinwärts').

(32) *kù-dú kúúdúh á=l-ááh ś=làwɔ́=wá ń-dɔ́wà*
SG-vagina SG:fig.SP SOURCE=LOC-head DIR=river=FOC P-stand:PLUR
'the fig-mulberry is on the field side of the river' (20210403; p.c.)

Figure 3.8 Kùdú kúúdúh

Next to hills (as in (31)) and passages (as in (5)), ancient baobab trees (*yʌ́cùk*; sg. *kʌ́cùk* 'baobab') are also used as points of reference, each having its own name, e.g., *Kʌ́cúk ˩Báátɔ̀, Kʌ́cúk Hìndìŋ, Kʌ́cúk Kàmbʌ́ʌ́lì, Kʌ́cúk Kʌ̀yìnt̪éè, Kʌ́cúk Kàlílìŋ, Kʌ́cúk Kàpà, Kʌ́cúk Kɔ́pɔ̀rárɔ̀ɔ́k, Kʌ́cúk ˩Túntúŋ* to name but a few. They have spe-

cial characteristics, such as numerous nests of the bateleur (*Kʌ́cúk Kʌ̀mbʌ́ʌ́lì* lit.: 'bateleur baobab'), or round and sweet fruits (*Kʌ́cúk ˬ Túntúŋ*, in the center of the Tima area), or, as is the case for *Kʌ́cúk Kàpà*, a folk tale is associated with it (see Figure 3.9 for photos of these three trees).

Figure 3.9 Kʌ́cúk Kʌ̀mbʌ́ʌ́lì, Kʌ́cúk Kàpà, and Kʌ́cúk ˬ Túntúŋ

All of these baobabs are so individuated, such eye-catchers, that the Tima immediately recognize whether a certain specimen is from their area or not.[8]

4.2 Intrinsic frame of reference

The second frame of reference in which the ANCHOR is not a speech act participant is the intrinsic frame of reference. Instead, the ANCHOR is at the same time (part of) the GROUND and the perspective of the speaker is not considered.

As mentioned in the previous section, the terms *dʊ̀kwààlí* and *dʊ̀kʊ̀mál* are ambiguous between the absolute and intrinsic readings – 'north' and 'left' for the former, and 'south' and 'right' for the latter (see Table 3.6). Generally, Tima people know quite well which reading is at issue. With mountains, countries, big rivers, etc., the cardinal direction meaning is the default reading; with movable GROUNDS like 'people', 'cars', and 'things', the notions of 'left' and 'right' are understood (and calculated based on the orientation of the object). Thus, the same term can occur in different frames of reference. As we will illustrate, *dʊ̀kwààlí* and *dʊ̀kʊ̀mál* are attested in the intrinsic frame of reference, discussed now, as well as in the relative frame of reference, discussed later.

8. Thus, one of the present authors compiled a booklet with photos of plants growing in the area. Her aim was to present the Tima name as well as the botanical name and for illustrations she used photos of plants taken in the Nuba Mountains. When one of the Tima people looked at the booklet and came to the photo of a certain baobab tree, he lingered for a moment before objecting: "This baobab is not growing in the Tima area."

A side-effect of doing certain tasks (mainly Task 4 on given/new information in locative expressions) from the manual on information structure compiled by Skopeteas et al. (2006) was that certain patterns with regard to spatial expressions appeared that we had not recognized before. This is mainly true for examples which exhibit the intrinsic or object-centered frame of reference (as one of the two binary frames). We cross-checked the results by letting our consultant describe photos from the area and getting him to respond to other stimuli, asking about the relation between two depicted items. The hypothesis that, whenever a GROUND has a 'face', FIGURE and GROUND are related to each other without the perspective of the speaker interfering, was thus confirmed. That means in practice that for the Tima people in the photo used as stimulus for (33) (see Figure 3.10), the 'woman' with the pot on her head (FIGURE) is to the left of 'Trudel' (as ANCHOR and GROUND), as is 'Hamid' (FIGURE) in relation to 'Dimmendaal' (as ANCHOR and GROUND) in the photo used as stimulus for (34) (see Figure 3.10). Since 'Trudel' and 'Dimmendaal' have an intrinsic/inherent front side, they also have intrinsic left and right sides (and an intrinsic 'back', for that matter). The 'woman' is standing on 'Trudel's' left side, as is 'Hamid' with regard to the left side of 'Dimmendaal'.

Figure 3.10 Stimuli for (33) and (34)

(33) *k-ʌ̀húnén=nʌ̌ dɔ̀kwààlí=ná ú=tùrúúdùl=í=yʌ́ ń-dɔ́wà*
SG-woman=DEM.PROX left=DEM.PROX DIR=Trudel=SEL=FOC P-stand:PLUR
'this woman is standing on Trudel's left'[9] (20210322; p.c.)

(34) *hàámít dɔ̀kwààlí=ná ś=dìmmɛ̀ndáál=í=yá ń-dɔ́wà*
Hamid left=DEM.PROX DIR=Dimmendaal=SEL=FOC P-stand:PLUR
'Hamid is standing on Dimmendaal's left' (20210322; p.c.)

9. The chosen translation reflects the Tima situation best, though in the context of describing a picture it would probably be more natural to say 'this woman is standing to the right of Trudel'.

Animals as well as humans can serve as both ANCHOR and GROUND as they have inherent fronts, backs and sides. Both the photos in Figure 3.11 serve as stimuli for sentence (35). And, as illustrated with Example (36) and (37) (see Figure 3.12), the GROUND can also be a vehicle with an inherent front side.

(35) *ṭ̲áwó dòkòmál=ná ó=kò-hòmbílí=í=yá ń-dǒwà*
Thawu right=DEM.PROX DIR=SG-donkey=SEL=FOC P-stand:PLUR
'Thawu is standing to the right of the donkey' (20210322; p.c.)

Figure 3.11 Stimuli for (35)

Figure 3.12 Stimuli for (36) and (37)

(36) *kì-béέy=ná ś-táàn pàmpàŋ=ná dòkòmál=ná*
SG-person=DEM.PROX P-beat SG.drum=DEM.PROX right=DEM.PROX
í=y-ájàlà=yí=yá ń-dǒwà
DIR=LOC-SG.bicycle=SEL=FOC P-stand:PLUR
'the person beating the drum is standing to the right of his bicycle'
(20210322; p.c.)

(37) *ìhwáá=ná ó-dówà ŋ̀=ájàlà=ná dòkwàálí=ná*
people=DEM.PROX P-stand:PLUR INS=bicycle=DEM.PROX left=DEM.PROX
ó=tòròmbíl=í=yá ń-dówà
DIR=LOC-SG.car=SEL=FOC P-stand:PLUR
'these people standing with a bicycle are standing to the left of the car'
(20210322; p.c.)

It plays no role whether the FIGURE (here the barrel) has an inherent front side or not, as is illustrated with (38) and (39) (triggered with the photos in Figure 3.13). The use of the relational terms for 'left' and 'right' solely depends on the GROUND, i.e., the 'child' here.

(38) *bàrìmííl dòkòmàl ɨ́=kɨ̀-címbʌ́rí=yʌ́ ń-dówà*
SG.barrel right DIR=SG-child=FOC P-stand:PLUR
'the barrel is (standing) to the right of the child' (20210403; p.c.)

Figure 3.13 Stimuli for (38) and (39)

(39) *bàrìmííl dòkwàálí ɨ́=kɨ̀-címbʌ́rí=yʌ́ ń-dówà*
SG.barrel left DIR=SG-child=FOC P-stand:PLUR
'the barrel is (standing) to the left of the child' (20210403; p.c.)

What has been said with regard to 'left' and 'right' is also applicable for 'in front of' and 'behind, at the back of'. The reference point is at the same time ANCHOR and GROUND (here 'car', 'tractor' and 'children' in Examples (40), (41) and (42)).

(40) *ìhwáá=ná álákɔ́ɔ́nɔ̌ ó=ʈò-ròmbíl=í=yá ń-dówà*
people=DEM.PROX behind:DEM.PROX DIR=SG-car=SEL=FOC P-stand:PLUR
'the people are standing behind/in the back of the car' (20210322; p.c.)

Figure 3.14 Stimuli for (40), (41), and (42)

(41) *kò-hòmbìlí=nă áyínálí=nă ś=t̪àráktàr=í=yá ń-dîîk*
SG-donkey=DEM.PROX in.front=DEM.PROX DIR=SG.tractor=SEL=FOC P-walk
'the donkey is walking in front of the tractor' (20210322; p.c.)

(42) *máyíká áyínálí í=íbʌ̀rímbʌ́rí=nʌ́=wʌ́ ó-hòndɔ̀nɔ́*
Meike in.front DIR=children=DEM.PROX=FOC P-sit.down
'Meike is crouching (lit.: sat down) in front of the children' (20210322; p.c.)

More examples triggered with staged photos of toys complemented the testing and confirmed our hypothesis that the intrinsic frame of reference is preferred. For instance, both stimuli presented in Figure 3.15 triggered the translational equivalent of 'the person is standing in front of the car' (43). Whether the FIGURE is facing the GROUND or not does not play a role. The front of the GROUND is the decisive factor for the spatial relation.

Figure 3.15 Stimuli for (43)

(43) *kì-béɛ́y=ná áyínálí ɔ́=l-àràbíyà=wá ń-dɔ́wà*
SG-person=DEM.PROX in.front DIR=LOC-SG.car=FOC P-stand:PLUR
'the person is standing in front of the car' (20210322; p.c.)

With *áyínálí* in Example (43), we find no morphological clue that (the view of) the speaker is considered. Also, even if we look at the scene from a different angle, the sentence would not change (cf. (42) above).

We will now look at those examples where a morphological device indicates that the speaker's viewpoint is part of the speech act. That is, Tima employs the morpheme *t̰* in certain locative expressions in order to indicate that the speaker is present (with *t̰* being a further locative marker otherwise not considered in this contribution; see Alamin et al., 2012 and Schneider-Blum, 2013b for more information). Let us consider the responses to the first picture in Figure 3.15 in more depth, and compare (43), with the 'man' being the FIGURE and the 'car' the GROUND, with (44), where the 'car' represents the FIGURE and the 'man' the GROUND.

(44) *àràbíyá=ná áyìnt̰álí í=kì-béɛ́y=ná=wá ń-dɔ́wà*
SG.car=DEM.PROX in.front:speaker DIR=SG-person=SEL=FOC P-stand:PLUR
'the car is standing in front of the person' (20210322; p.c.)

We concentrate on the relator, *áyínàlì* vs. *àyínt̰álí*. In contrast to *áyínàlì*, occurring in (43), *àyínt̰álí* in (44) signals not only that the 'man' is 'in front of' the car (a notion shared with *áyínàlì*), but also that the 'car' as FIGURE is closer to the speaker than the GROUND is. Responsible for this additional notion is *t̰*. In other words, in this scene, the FIGURE is between the speaker and the GROUND. However, we argue that this does not turn the frame of reference from intrinsic to relative. The inclusion of the speaker into the speech act adds a further notion, namely that the speaker is near the FIGURE, but the semantic core of the relation remains untouched. Even if the speaker changes position, the 'car' remains 'in front of' the 'man', only we find then *áyínàlì* instead of *àyínt̰álí* (as in (42)). The speaker in utterances like (44) is, though considered, not the ANCHOR.

Tima has, next to *áyínàlì* vs. *àyínt̰álí*, other relational expressions which are combined with *t̰* as the circumstances require. There is, for instance, the source marker *a=* and its counterpart *ant̰ə*, the latter implying that the speaker is at the source, or the direction markers *V=* and *nt̰V=*, the latter implying that the speaker is at the goal. Consider also *àlàkɔ́ɔ̀* 'behind (neutral information with regard to the position of the speaker)' vs. *án↓t̰ákɔ́ɔ̀* 'behind (near to speaker)' (see Alamin et al., 2012 for more examples). The marker *t̰* is not attested with the expressions for 'left', 'right' or *ál↓éédîì* 'in the back of, behind'.

4.3 Relative frame of reference

By contrast to the intrinsic frame of reference, in the relative frame the speaker's position and perspective is relevant for the chosen construction. That is, the ANCHOR is not the GROUND, but a speech-act participant. The situation in Tima is rather complex. Let us start by looking at the photo of a small mountain group in Tima (Figure 3.16). The consultant is not familiar with this part of the region and is thus not sure about the cardinal directions (and explained so). He hence uses the relevant term *dòkwààlí* with its second meaning 'left'. The situation seems similar to the one described for the examples in the previous section, but there is a crucial difference: The mountains do not have an intrinsic front side. Their 'front' is determined by the position of the speaker, i.e., the description is speaker-oriented. If the speaker changes his position and thus his viewpoint (e.g., by going to some other side of the mountain), the relation between the mountains would change and the proposition of Example (45) would be false (cf. Danziger, 2010, p. 168 on the importance of determining the ANCHOR; see also Table 3 on Rotation Sensitivities in Danziger 2010, p. 175). Thus, we have to analyze the situation as a relative one, with the speaker being the ANCHOR. As Levinson (2003, p. 84) states for a comparable scene: "We assimilate the tree [i.e., our mountain] to the 'canonical encounter' where speakers face each other, hence the front of the tree is towards us […]." In this sense, language use in Tima is similar to English, in that 'in front of' Handiyaang means 'between the mountain and the speaker'. But whereas English speakers (or Germans for that matter) "fail to make the rotation of 'left' and 'right'" (Levinson, 2003, p. 84), the Tima speakers do so and 'left' and 'right' are thus oriented towards the mountain's assigned front side.[10] Also a 'tree/bush' (see (46)) as well as a 'boulder', a 'pyramid', a 'well' (see (47)), and a 'fence' get their front side assigned to them in terms of the speaker's viewpoint, while a 'house (with a door)', a 'sofa' and 'chair' have intrinsic front sides.[11]

(45) *hàndíyàáŋ dòkwààlí=ná ɔ́=kàpílí=yá*
Handiyaang north=DEM.PROX DIR=Kapili=FOC
'Handiyaang is to the left of Kapili' (20210322)

10. It is also not quite correct to generalize this speech behavior over all English and German speakers. We know a German radiologist who always uses 'right' and 'left' wrongly [sic!] when describing the positions of people relative to each other in photos. His profession makes him do a 180° rotation for both axes, the front/back axis and the left/right axis.

11. These are all items which occur in Task 4 of Skopeteas et al. (2006). This task was not designed to find out about the difference between intrinsic and relative frames of reference. That means in particular, that all the people who served as figure faced the viewer. Thus, additional material, using similar grounds, but figures who/which are not facing the viewer, contributed to the current analysis.

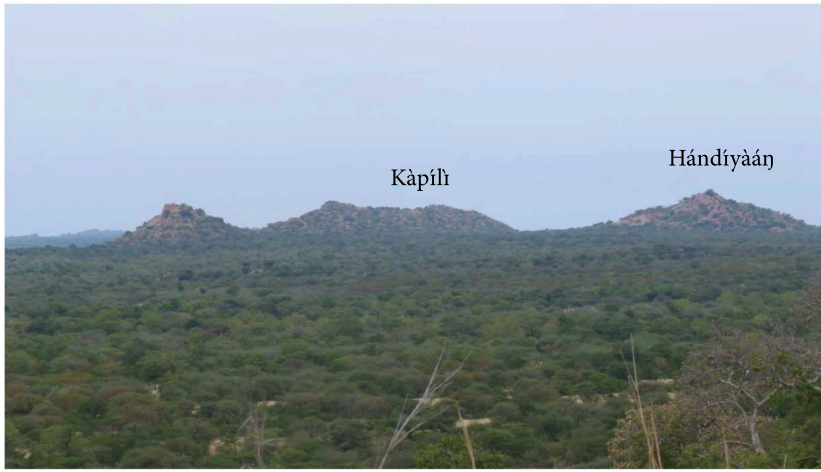

Figure 3.16 Kàpílì and Hándíyàáŋ

A simple test proves whether a certain item has an intrinsic front side or not. Next to *áyínàlì/àyínn̪àlí* 'in front of', Tima has the expressions *álíyéèn/ánn̪tíyéèn*, also designating 'in front of'. They are based on the body term *céèn* 'face' (see Table 3.5). The terms *álíyéèn/ánn̪tíyéèn* can only be used with a GROUND that has an inherent front side.[12] Since a barrel does not have a front, and neither does a mountain, cows cannot graze **álíyéèn/ánn̪tíyéèn* of the mountain or a boy cannot stand **álíyéèn/ánn̪tíyéèn* of a barrel.

Already in (21) and (23), we came across the ventive verbal derivation marker, indicating that an action is performed towards the direction of the speaker. This may be on the horizontal axis as well as the vertical axis, i.e., something can move closer from far away (see (23)), from above down (as in (21)) or from the bottom to eye height (see Alamin et al., 2012, p. 22). The following Example (46), elicited with the help of the picture series of Task 4 of Skopeteas et al. (2006), not only displays the prepositional marking that flags the speaker's perspective in the speech act (see previous section), but the verbs are also derived with the ventive. The first one *àndíyáŋ* 'it has come' tells us that a new participant enters the scene, i.e.,

12. Note that the usage of *álíyéèn/ánn̪tíyéèn* 'in front of' does not imply that FIGURE and GROUND have to be face to face to one another. For example, in (43), we could replace *áyínàlì* by *álíyéèn* independent of the situations as displayed with the photos in Figure 15. By way of contrast, *ál↓ éédîì* 'behind' seems to be further grammaticalized, since it can be used with items that do not have an inherent back side, as Examples (46) and (47) show.

comes closer. The second verb, *áŋkɨ̀dʌ̀wùlúŋ*, 'it turned around', lets us know that the 'horse' comes even nearer to the position of the speaker.[13]

Figure 3.17 Stimulus for (46)

(46) *[…] kə̀-mə̀rn̪áà àn-díyáŋ àn-dóól áléé'díí cì-bí='wééŋ;*
SG-horse 3PRF-walk:VENT 3PRF-stand:MV behind SG-tree=DEM.REF
áŋ-kɨ̀dʌ̀wùl-úŋ àn-díyáŋ dóól àyínn̪àlí cì-bí
3PRF-bend:MV-VENT 3PRF-walk:VENT stand:MV in.front.speaker SG-tree
'[there was a lion in front of the bush] a horse came and positioned itself behind that bush; it turned around and came to stand in front of the bush'
(20170131_55)

Also Example (47) contains the verb *kɨ̀dʌ̀wùl* 'bend:MV', but here the verb is not derived with the ventive marker. Not surprisingly, this bears the notion that the movement is not towards the speaker.

(47) *[…] àn-dɔ́ɔ̀ màdʌ́k áŋ-kɨ̀dʌ̀wùl-áá kə́-bá àn-dóól áléé'díí*
3PRF-stand.up again 3PRF-bend:MV-INS SG-well 3PRF-stand:MV behind
kə̀-bá
SG-well
'[A girl was first in front of a fence, went from there to the front side of a well and] again she got up and turned around the well to stand behind the well'
(20170119_45)

Thus, as was the case with the marker *n̪*, the ventive marker also relates the speech act to the position of the speaker, but unlike *n̪*, ventive marking here has an influence on the spatial relation itself since it is correlated to the position of the speaker as ANCHOR. If, for instance, the viewer/speaker were watching the scene from the

13. An ongoing grammaticalization of the forms around the verbal root *di-* glossed as 'walk' leads to a bleaching process of the semantic content, comparable to English 'go to do sth./come to do sth.'.

opposite side of the bush in the photos of Figure 3.17, ventive marking with the verbs of the second clause (i.e., *áŋkɨ̀dʌ̀wùlúŋ*) would be infelicitous.

The question may arise whether there is a change regarding frame of reference if both figure and ground are faceless, e.g., when two bowls are located relative to each other. However, this is not the case, as our tests revealed.

Figure 3.18 'bowls 1', 'bowls 2', 'bowls 3', and 'bowls 4'

This means, in detail, that in stimulus 'BOWLS 1', the small bowl is to the 'right' (*dʊ̀kʊ̀mál*) of the big one; in 'BOWLS 2', the big one is 'behind' (*àlàkɔ́ɔ̀*) the small one; in 'BOWLS 3', the small one is 'behind' (*àlàkɔ́ɔ̀*) the big one, and, finally, in 'BOWLS 4', the small one is to the 'left' (*dʊ̀kwààlí* of the big one. Similar responses were triggered with 'bottles' and 'balls'.

5. Conclusion and outlook

For this contribution we chose two subdomains of the domain of spatial language to explore in Tima. We looked at topology (with some reference to toponomy) and the three frames of reference, absolute, intrinsic, and relative, for the horizontal dimension. All these devices and patterns can be described on their own, but more interesting is to look at the interplay between them, as we tried to do.

Though Tima has to a large extent lost its noun class system, there are still locative markers to be found which replace a non-locative number-marking prefix for suitable nouns in order to designate the location. These locative nouns behave differently from other nouns in that the locative markers may function as prepositions (see e.g., Examples (1) and (3)–(5)). Furthermore, the *l(V)*-derived noun may occur as an argument (see (2)), which is neither attested for other locative nouns nor for nouns precliticized by one of the prepositions.[14] Two prepositions are relevant for the topic of our paper. These are the goal/direction marker *V*= and the source marker *a*=. They may precede a noun directly, as in (14) for the goal

14. The future will show whether the special role of *l(V)*-derived nouns will survive, because, occasionally, we find already *l(V)*-derived nouns precliticized by the goal marker (e.g., in (21)).

marker and in (6) for the source marker. In addition, they help to form more spatial relations when being combined with locative nouns, as in (7), or with other locational expressions, like the adverb *tòʔàŋ* 'high, up, on' (see Table 3.5).

As our data show, Tima makes use of the absolute, the intrinsic and the relative frames of reference. Within the absolute frame, landmarks are preferred over cardinal directions. The latter are mainly used for relationships in a wider area, such as the Nuba Mountains or the Sudan, in order to indicate the rough direction. Within the Tima area, landmarks are used far more often than cardinal directions. Of course, the Tima area is small enough and most people know the most important landmarks of the area, which are on the one side the various hills and rivers (see Map 3.1). Also, one may refer to neighboring ethnic groups (like 'go towards Tulishi', instead of saying 'go south'). On an even smaller scale, on the other hand, people use e.g., big trees (mainly baobabs), huge flat stones, or the homes of certain families as orientation tools. These trees as well as characteristic rocks each bear a proper name. In our contribution, we only touched the field of toponymy very briefly. More work on it, especially on the semantic side of the expressions and their historical background, would be desirable.

In Tima, the intrinsic frame of reference is relevant whenever the GROUND has a front side, with the logical consequence that GROUND and allocentric ANCHOR coincide. The shape of the FIGURE is irrelevant. Decisive is solely whether the GROUND has an inherent shape which can be mapped onto the planes of the human body, in that it has a front and back side as well as left and right sides.

The situation is different when the ground has no face. In that case, a pattern falling within the relative frame of reference emerges and the speaker's perspective is involved. The GROUND in this case is assigned a face according to the side we as a speaker are confronted with. This is possible for immobile items like mountains, trees, and granaries, but also for mobile, round items like balls, bowls, etc. Anything between speaker/observer and the GROUND is in front of the ground. And once having been assigned a face, the backside as well as the left and the right side of the ground are also determined (comparable to the intrinsic frame). That is, the whole relation between figure and GROUND rotates by 180° (cf. Levinson, 2003, p. 87, Figure 3.4). This pattern can only be distinguished from the intrinsic pattern by moving the observer's viewpoint: the intrinsic relation remains stable even if the viewer moves away, while with the relative pattern, the relation becomes false when the viewer moves to some other place. Table 3.7 summarizes what has been said about intrinsic and relative frames of reference in Tima.

As we also saw, the three frames of reference dealt with in this paper interact with each other. This is due to the ambiguity of the terms used for the cardinal directions 'north' and 'south' which at the same time denote 'left' and 'right'. While in the former reading the absolute frame is employed, it is the intrinsic or relative

frame of reference with the latter reading (cf. Levinson 2003, p. 49 on the ambiguity of absolute systems), in turn depending on the presence vs. absence of an intrinsic front side.

Table 3.7 Intrinsic vs. relative frames of reference in Tima

	Figure with inherent face	**Faceless figure**
Ground with inherent face	binary, intrinsic	
	(person : car)	(barrel : boy)
Faceless ground	ternary, relative	
	(person : tree)	(bowl : bowl)

For the sake of completeness, we also considered two morphological devices which at first sight seem to corrupt the system, but on second reflection fit in perfectly. Thus, the morpheme *t̲* which may be incorporated into a spatial expression indicates that the FIGURE is nearer to the speaker than the GROUND. Nevertheless, in a situation where the intrinsic frame of reference holds, the speaker is never the ANCHOR in locating two objects relative to one another (as we showed in Section 4.2). The morpheme here just contributes additional information concerning the viewpoint of the speaker, with no influence on the described relationship between FIGURE and GROUND. By way of contrast, when having identified a situation as being assigned to the relative frame of reference, *t̲* refers to the ANCHOR. The second morpheme is the verbal ventive marker. If it occurs, the action is performed towards the speaker. That is, the speaker is again part of the speech act, but again, in an intrinsic frame of reference situation, the occurrence of the ventive marker has no influence on the relation between FIGURE and GROUND, because the speaker is not the ANCHOR. Only, in a situation where the relative frame of reference holds, the speaker serves as ANCHOR and here ventive marking on the verb supports the established relation (as shown in 4.3).

Though having had an in-depth look into the two sub-domains topology and frames of references of the system of spatial language in Tima, a lot remains to be done. First of all, the findings of this paper with regard to the frames of reference should be strengthened by more systematic testing of the rotation sensitivities (cf. Danziger, 2010, p. 175; for methods see Levinson, 2003, Chapter 5) and some investigation of the direct frame of reference should be taken into consideration. Other domains have not been touched at all, such as the non-angular specification deixis. However, this is a topic worth describing on its own. Toponymy would also be a rewarding field to explore. Tima is rich in transparent and semi-transparent place names, and as long as people remember their history, the circumstances which led to these names will also not be forgotten.

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Abbreviations

=	indicating cliticization
-	indicating affixation
1,2,3	1st, 2nd and 3rd person
ADD	additive
AP	antipassive
APP	applicative
CAUS	causative
COP	copula
DEM	demonstrative
DIR	direction/goal
DIST	distal
EXCL	exclusive
EMPH	emphasis
ERG	ergative
FOC	focus marker
INCL	inclusive
INS	instrumental
LOC	locative
MV	middle voice
OPT	optative
P	person marker
PL	plural
PLUR	pluractional
PRF	perfect
PRON	pronoun
PROX	proximal
REF	referential
REP	reported
SEL	selective
SG	singular
SOURCE	source
STAT	stative
TAM	tense/aspect/mood
TR	transitive
V	vowel/verb
VENT	ventive

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