

Expressions of Cardinal Directions in Nilotic and in Ubangian Languages*

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In the Nilotic and Ubangian languages expressions for cardinal directions have been created on the basis of a wide range of conceptual sources: primarily cosmological, geographical and atmospheric concepts. But also names of neighbouring ethnic groups and even historical events are used as such. Borrowing of naming systems, however, do not occur.

Keywords: Nilotic languages, Ubangian languages, cardinal directions

1. Introduction

In agreement with preceding anthropological and linguistic studies we speak of four cardinal directions¹. We are, however, aware of the fact that many indigenous knowledge systems do not know four cardinal directions, but only three, some only two or one (cf. Brown 1983, Heine 1997). In Africa, systems with only three cardinal directions are known in the Bantu languages Zulu (South Africa), Sesotho (South Africa, Lesotho), Kimatengo, Kihehe (both Tanzania), Tonga (Zambia, Malawi) and Shona (Zambia, Zimbabwe) (Brauner 1998:29).

We assume that before the modern compass direction system was distributed all over the world, different languages and language groups developed independent and self-contained systems of describing cardinal directions. While single linguistic groups have developed particular cardinal direction systems, a phenomenon we call ‘isolated application’, others share systems with neighbouring groups as a result of inheritance or borrowing.

Brown (1983:122) assumes that etymological transparency of lexical denotations for cardinal directions is a strong indication that they constitute a relatively recent phenomenon. His hypothesis is further based on the disputable assumption that people formerly were far less mobile than they are today. By consequence there would have been no necessity to create terms denoting cardinal directions. History shows, however, that geographic mobility even over long distances is almost as old as mankind. Even over a period of several centuries many ethnic groups in Africa remember the direction from where they came, before settling in their present areas.

We want to underline that cardinal directions are not necessarily identical with compass directions. Neither should every language be expected to distinguish conceptually and nomenclaturally four cardinal directions. In case that a language does, they need not be located on the axes of a Cartesian coordinate system. Brauner (1998:28) illustrates this with examples from Shona. With regard to Swahili he shows that the system of cardinal directions has been reduced from six directions to only four (1998:30). *kusini* and *kaskazini* refer in the old system to SOUTH-WEST and NORTH-EAST respectively, the directions from where the two monsoons blow. They have replaced the old denotation for ‘North, North Wind’ *shema1i* and *papazi/upapazi/uhe1i* for ‘South, South Wind’ and are used today with reference to SOUTH and NORTH. Cognates of these two terms, which are already documented by Bleek (1856), are also found in Pokomo (*kusi(ni)* and *kasikathi*) and Tuku (*ruvutoni* and *kasikasi*), spoken in the hinterland, to denote the NORTH-EAST monsoon and the SOUTH-EAST monsoon respectively. These languages may also have a similarly reduced

cardinal direction system or that they have modified a non Cartesian system into a Cartesian one.

With regard to Ewe, a language spoken in south-eastern Ghana and Togo, conflicting old and new names for cardinal directions coexist. Ameka and Essegbey (2006:382ff) state that originally *dziehe* ‘upside’ referred to the SOUTH-WEST and *anyiehe* ‘downside’ to the NORTH-EAST. While people who live on fishing still use the term in that way, it is used in modern geography schoolbooks with reference to the upper part of the map, i.e. to the NORTH.

1.1 Methodology and collection of data

The topic of the present paper arose from research on language contact between Ubangian and Nilotic languages in the Nile and Ubangian riverine systems. Our investigation is based almost exclusively on a survey of dictionaries and grammars of Nilotic and Ubangian languages, and, in addition a collection of field material by Anne Storch (2004) on Nilotic languages. Most of the older dictionaries and descriptions of African languages contain little or no information on expressions of cardinal directions. This fact does, however, neither reflect geographical immobility of the speakers nor their lack of knowledge about the world. It results rather from the fact that until recently cardinal directions were not listed in the questionnaires and the topic was not often a matter of concern in linguistic research. The entries for cardinal directions which are given in the dictionaries and vocabularies we consulted confirm that a terminology for describing the world with reference to cardinal directions does exist in African languages. With regard to the Tugen in Kenya, Behrend (1987:15) outlines that they subdivide their world in agreement with the cardinal directions into four sections. The intersection of two axes at *kwen* ‘middle’ is not a fixed point, but moves to wherever the elders make a fire creating a ritual centre.

2. Conceptual sources of cardinal directions

In the following we describe a wide range of conceptual sources on which expressions for the cardinal directions in Nilotic and Ubangian languages are based. It is, of course, conceivable that the total amount of concepts is not fully exhausted, but we are sure that the significant source concepts for cardinal directions are cosmological and atmospheric features, landmarks, ethnic groups, environment specific features, history related features, bodypart terms and right-left orientation as well as deictic orientation.

2.1 The sun

Among the celestial bodies, it is above all the sun which serves as a conceptual source for cardinal directions. The morning stars as well as the firmament also have this function.

On the basis of an investigation of 127 languages worldwide by Brown (1983) and of 125 African languages by Heine (1997) they both claim that the sun ranks among the most productive sources for orientation terms, particularly for those denoting EAST and WEST. These two directions are referred to by expressions like ‘ascend’, ‘go up’, ‘descend’, ‘fall’ or the like. Metaphorical extension of the meaning of items like ‘morning’ or ‘sunrise’ and

SOUTH and to deictic orientation systems (Brown 1983:28). Brauner (1998) serves, however, that with regard to many African languages – in particular those spoken in the interior of the continent, e.g. Shona – cardinal directions are not related to winds.

Brown (1983) claims that identification of EAST through reference to the rising of the sun and of WEST to the setting of the sun constitutes the most conventional manner of developing terms for cardinal directions. EAST may be referred to as the place where the sun rises as in Pāri (ex. 1), where it is in the morning as in Belanda Boor (ex. 3) or where the sun comes as in Baka (ex. 6). In a similar way WEST is referred to as the place where the sun sets as in Pāri (ex. 2), the place of the evening as in Belanda Boor (ex. 4) a hole into which the sun falls in the evening like in Banda-Mono (ex. 5) or where it sleeps as in Baka (ex. 9).

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|-----|------------------------|---|
| (1) | Pāri
(Nil.) | <i>kur tuŋŋi cēŋ</i>
place rise sun
East (Storch p.c.) |
| (2) | | <i>kur pāththi cēŋ</i>
place set sun
West (Storch p.c.) |
| (3) | Belanda Boor
(Nil.) | <i>kùr túuró</i>
place morning
East (Storch p.c.) |
| (4) | | <i>kùr tíínó</i>
place evening
West (Storch p.c.) |
| (5) | Banda-Mono
(Ub.) | <i>cá-kùdú-òlò</i>
of-hole-sun
West (Kamanda-Kola 2003) |
| (6) | Baka
(Ub.) | <i>gàje na dɔ bakɔ</i>
side PREP come sun
East (= from where the sun comes) (Brisson & Boursier 1979) |
| (7) | | <i>gàje na lèji bakɔ</i>
side PREP go sun
East (= where the sun goes [out] Brisson & Boursier 1979) |
| (8) | | <i>gàje kɛ bakɔ ʔá làti 'bo nɛ</i>
side REL sun 3s sleep there here
West (= where the sun sleeps) (Brisson & Boursier 1979) |
| (9) | | <i>gàje na gɔ bakɔ</i>
side PREP go sun
West (= where the sun goes) (Brisson & Boursier 1979) |

In the studies by Brown (1983) and Heine (1997) source categories related to body parts ascribed to the sun hardly play a role. Heine (1997:58) indicates that body part terms may be indirect cognitive sources of expressions for cardinal directions. Our investigations confirm that body-part terms constitute common conceptual sources in both Ubangian and Nilotic languages. EAST is quite often referred to as ‘face of the sun’ or as ‘eye of the sun’. Both expressions indicate that the sun is facing the spectator from its position in the EAST, hence are in agreement with Heine 1997:42) who states that ‘face’ and ‘eye’ are the most common conceptual sources for ‘front’ in African languages.

- (10) Nuer *nhíam*
 (Nil.) face
 East (Storch p.c.)
- (11) Mayak *áng yãmi*
 (Nil.) sun face
 East (Storch p.c.)

With regard to the Tugen (Southern Nilotic), Behrend (1985:9) outlines the philosophical background of this concept. Here the expression ‘eye of sun’ is referring to the name of the creator God. "Dass mehr als eine Welt vorhanden sei, möglicherweise sogar zwei oder drei Welten koexistieren, halten Tugen für denkbar. Doch interessieren sie sich allein für die eigene. Diese wurde von Asis, einem otiosen Gott, erschaffen, der sich nach der Schöpfung zurückzog und nun in Gestalt der Sonne am Himmel steht. Obwohl er als ‘Auge des Himmels’ alles sieht, kümmern ihn die Menschen nur wenig; er straft und belohnt sie nicht." Dimmendaal and Rottland (1996) show, that the ‘eye’ is also the ‘opening’, where the sun comes out.

The Tugen share the denotation for EAST, *koong’ asiis*, with Kipsikiis. They equate it with life, light and fertility. The time from sunrise till noon, when the sun is in the zenith, is considered a good time. Everything that is successful will take place in this period. The WEST they call *cherongo*. It is identified with death, darkness and infertility (Behrend 1987:15).

- (12) Kipsikiis *koong’ asiis*
 (Nil.) eye sun
 East (Toweett 1979)

It is apparent that the front part of the head, i.e. ‘face’ or ‘eye’ is the ideal bodypart of the sun to refer to EAST. Nevertheless, in Shilluk the expression ‘eye of sun’ is used in the denotations for both EAST and WEST, though complemented by reference to the respective time of the day, ‘morning’ and ‘evening’.

- (13) Shilluk *wàŋ càŋ múàŋ*
 (Nil.) eye sun morning
 East (Storch p.c.)
- wàŋ càŋ bódòrò*
 eye sun evening
 West (Storch p.c.)

The attribution of ‘forehead’ to the sun is documented only for Banda-Mono (14) and the conceptual frame, i.e. the reference to NORTH, is not clear.

- (14) Banda-Mono *cá-pá1à-ga*
 (Ub.) [place] of-forehead-(?)
 North (Kamanda-Kola 2003)

Other body parts the sun may linguistically be endowed with are ‘foot/leg’. As opposed to ‘face/eye’ these terms are neutral with respect to the choice of direction. While in Banda-Mono (DR Congo) ‘foot/leg of sun’ denotes EAST, it denotes WEST in Mayak (Sudan). It is the leg that enables the sun to start its tour in the EAST for the speakers of Banda-Mono, and to end the tour in the WEST for the speakers of Mayak.

- (15) Banda-Mono *àdà-ò1ò*
 (Ub.) foot-sun
 East (Kamanda-Kola 2003)
- (16) Mayak *àng kīīr*
 (Nil.) sun leg
 West (Storch p.c.)

Brown (1983) and Heine (1997) also mention cardinal directions related to the deictic orientations RIGHT, LEFT, FRONT and BACK. In Brown’s study these etymologies – together with UPSTREAM and DOWNSTREAM – rank lowest in frequency (cf. Heine 1997:53). In most cases the deictic centre is a river (see chapter 2.3), but in few exceptions the sun and the earth are chosen as the deictic centre.

The sun as the deictic centre is documented in Ngbandi (DR Congo) and Bari (Sudan, Uganda). In Ngbandi WEST is described as ‘behind the sun’ and EAST is ‘under the sun’. This shows that the catalogue of deictic orientations given by Brown and Heine has to be completed at least for the category UNDER.

- (17) Ngbandi *gbia ndó-dù má da na ndá 1á*
 (Ub.) chief HAB-sit NEG house PREP behind sun
 West
- 1o du na gbε 1á*
 3s sit PREP under sun
 East

The chief lives at the eastern side [of the village], not at its western side [therefore he does not get the sunlight into his eyes, when he investigates his village]. (Lekens 1958 :495)

The Bari expression for NORTH is a reduced prepositional phrase, the reference object, i.e. ‘sun’ being deleted. What is in the back of the sun is the area where the sun is never to be seen.

- (18) Bari *lɔ-bɔt*
 (Nil.) REL-back
 North (that what is in the back) (Spagnolo 1933)

In Dinka (19), EAST is referred to as the place behind the earth, i.e. the area where the sun rises.

- (19) Dinka *piny cien*
 (Nil.) earth behind
 East (Nebel 1979)

2.2 Celestial bodies other than the sun

The Eastern Nilotic language Bari (Sudan, Uganda) denotes EAST by reference to the Morning Star or Venus (20). According to Brown (1983) this is a quite common strategy among other languages of the world, but with regard to Africa we only know of this one example.

- (20) Bari *yvre*
 (Nil.) Morning Star, Venus
 East (Dimmendaal & Rottland 1996)

Another celestial body to constitute the conceptual source for cardinal directions is the firmament or the surface of the sky. This is documented in Copi (Uganda) (21, 22), Luwo (Uganda, Kenya) (23) and in Gbaya (CAR, Cameroon) (24, 25). It is worth mentioning that the sky is attributed buttocks in two languages, Luwo and Gbaya. But similar to the bodypart ‘leg/foot’ of the sun, ‘buttocks of the sky’ are neutral to the direction on a comparative level.

- (21) Copi *kù-māa lɔ*
 (Nil.) place (of)-heaven
 North (Storch p.c.)
- (22) *kù-pín*
 place (of)-earth
 South (Storch p.c.)
- (23) Luwo *thár pín*
 (Nil.) buttocks earth
 South (Storch p.c.)
- (24) Gbaya *zù zân*
 (Ub.) head sky
 West (Roulon-Doko 1996:47f)
- (25) *ndâyà zân*
 base sky
 West = buttocks of sky (Roulon-Doko 1996:47f)

The translation ‘head’ for *zù* in the Gbaya expression *zù zân* is misleading. The sky is not perceived as an animal, and WEST not as the bodypart ‘head’ of this animal. ‘Buttocks of the sky’ is indeed regarded as a bodypart, referring to the location in the EAST where the daily birth of the sun takes place. It must, however, be underlined that the endowment of the sky with a bodypart does not imply that the Gbaya perceive of it as a zoomorphic creature (Roulon-Doko, p.c. Sept. 2006).

2.3 Deictic expressions denoting cardinal directions

In our data there are only three examples where directions are built by reference to the FRONT-BACK deictic axis. The point of reference is either the sun (Ngbandi, ex. 17, Bari, ex. 18) or the earth (Dinka, ex. 19).

The deictic axis LEFT-RIGHT as a source of direction terms is found in a number of Western Nilotic languages. They are all egocentric, reflecting the line of vision which itself results from equating the outflow of a river to the speakers’ line of vision. In an environment, where a big river is the most important geographical feature, it is likely to be chosen as object of reference for the determination of cardinal directions. This is done in equating the flowing direction to the line of vision of a person.

For the Acoli who live North of the Victoria-Nile flowing from East to West NORTH is identical with right and SOUTH with left (26, 27). For the Belanda Boor (28, 29) who know the tributaries of the Nile in the Bahr el Ghazal province of Sudan as flowing from West to East, NORTH is identical with ‘left’ and SOUTH with ‘right’

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|------|------------------------|--|
| (26) | Acoli
(Nil.) | <i>lacuc</i>
right
North (Storch p.c.) |
| (27) | | <i>lacam</i>
left
South (Storch p.c.) |
| (28) | Belanda Boor
(Nil.) | <i>kùr cám</i>
left
North (Storch p.c.) |
| (29) | | <i>kùr kúc</i>
right
South (Storch p.c.) |

More problematic is the case with regard to Dinka. In one dialect, Rek Dinka, *cien* means WEST, while in Ruweng Dinka it means EAST. In this latter, however, *tueng* means EAST while in Rek Dinka it means WEST (Dimmendaal and Rottland 1996:68f.). This contrast can be explained by the fact that the speakers of Rek Dinka live south of the Bahr el Arab, which flows from West to East, while the Ruweng Dinka live North of it.

A different pattern of orientation is found in Zande (DR Congo, Sudan, CAR) (30, 31). The point of spatial reference is the territory of this ethnic group, which is the riverine

system of the northern tributaries to the Ubangi. The geographical situation serves as the conceptual source for cardinal directions in Zande.

- (30) Zande *bangiri pia*
 (Ub.) interior (dry) land
 East (Canon & Gore 1931)
- (31) *pa-vuru-rago*
 place-inside-country
 North, South (Canon & Gore 1931)

Note that this language has only three cardinal directions: EAST, WEST and SOUTH/NORTH. The latter refers to the area located between higher and drier areas at the eastern end of the Zande territory and the lower lands at its western end.

2.4 Atmospheric features

In many languages of the world, atmospheric features, in particular winds and seasons, are metaphorically extended to refer to the direction from which they come. In the northern hemisphere warm weather is often brought by winds from the South, and the North-Wind brings rather cold weather. Here, in many languages names for the directions NORTH and SOUTH are often related to winds, but with regard to EAST and WEST this is rarely the case (Brown 1983:132).

Climatic conditions are significantly different in areas close to the equator, but in the interlacustrine area, direction terms related to winds are found in several languages. According to Brauner (1998:29) the denotation for WEST in Kinyoro is related to the heavy winds. In Shilluk (32) and Dinka (33) the denotations for NORTH and SOUTH are also related to winds and seasons, respectively.

- (32) Shilluk *wàŋ wùudò*
 (Nil.) opening/eye westwind
 North (Storch p.c.)
- wàŋ údúluàl*
 opening/eye eastwind
 South (Storch p.c.)
- (33) Dinka *long rut*
 (Nil.) side rainy season
 North (Nebel 1954)
- long mei*
 side dryness
 South (Nebel 1954)

2.5 Environment specific features and landmarks

A further strategy of innovating terms for cardinal directions is the reference to environment-specific features and landmarks. Environment-specific features are topographic characteristics such as the levelling (ascending or descending) of an area, the runoff of rivers, or the ecological quality of an area. In Ngumba, a Bantu language spoken in DR Congo, the denotation for EAST, *jihe*, is the same as that for ‘forest’ (Skolaster 1910, cit. in Brauner 1998: 29). We define landmarks as salient geographical features like specific rivers, villages, and mountains. In many languages it is furthermore difficult to distinguish between the general terms for ‘mountain’, ‘river’, etc. and the denotations for specific mountains and rivers. The Kalenjin term *mosob* ‘higher land’, e.g., which is also the denotation for EAST (Rottland p.c.) is the source for the loan *masaba*, an alternative name for Mount Elgon in Kenya. It denotes in particular the highest peak of that mountain. For these reasons the two categories are dealt with as a single type of conceptual source in this paper.⁴

It is important that the environment specific features do not only relate to directions, but that they have a wide range of other connotations. In agreement with the topography of their mountains which range from North to South, the Tugen, e.g., relate SOUTH, *katogon*, with altitude, dignity, rain, coolness, masculinity and fertility. NORTH, *kaboren*, they relate with lowness, ignobility, dryness, heat, femininity and infertility (Behrend 1987:15).

Cardinal directions determined with respect to the altitude of a mountain as a point of reference, lead to different results depending on which side of the mountain the speakers of a given language live. According to Bernd Heine (p.c.), among the Matapato Maasai living north of Mt. Kilimandjaro, the adverb *kɔpɪkɔp* ‘down’ tends to be used for NORTH and *shómata* ‘above’ for SOUTH (34), while among the Kisonko Maasai to the South of Mt. Kilimandjaro, the terminology has opposite meaning, namely ‘down’ for SOUTH and ‘up’ for NORTH (36). This indicates that the directions are either mere connotations of *kɔpɪkɔp* and *shómata* or that they have become part of the lexicon in contrasting ways.

		<i>kɔpɪkɔp</i>	<i>shómata</i>
(34)	Matapato Maasai (Nil.)	down North (Bernd Heine p.c.)	above South (Bernd Heine p.c.)
(35)	Kisonko Maasai (Nil.)	down South (Bernd Heine p.c.)	above North (Bernd Heine p.c.)

Ngbandi is the only language where we found the name of a village used to denote a direction, a prototypical landmark (36). It is furthermore an ideal case of an ‘isolated application’. The alternative denotation for West (37) might indicate that the landmark reference is a spontaneous solution and not a standard expression

- (36) Ngbandi *lá* *`-zenga* *a-ti* *té* *Gbuàṅ-Ngbando,*
 (Ub.) sun 3s-lower SM-fall PREP Gbuàṅ-Ngbando
 lango *a-ngbɔ̃* *wa-nguru*
 sleep SM-take AG-strength
 The sun sets near Gbuàṅ-Ngbando and sleeps seizes the strong one.
 (Lekens 1958)
- (37) Ngbandi *lá* *ndóti* *ge* *do*
 (Ub.) sun fall along lowland/West
 The sun falls in the West (Lekens 1958:965)

2.6 Ethnic groups

According to Brown (1983) reference to neighbouring ethnic groups is the least frequent strategy of creating cardinal directions in the world. In Africa it has, however, been documented in various parts of the continent. Mietzner & Rous (2005: 8) give examples from Mofu Gudur, a Chadic language, and Brauner (1998:29) gives an example from Tonga, spoken on both sides of the middle Zambezi.

Among the languages investigated we found only one, Bianjida (spoken in North Western Tanzania) where the name of a neighbouring ethnic group is used to denote a cardinal direction. The term for SOUTH *sukumeera* refers to the Bantu group Sukuma and the one referring to the NORTH *taqameera* refers to the Takama, a subgroup of the Nyamwezi (cf. Gordon 2005). The denotations for SOUTH and NORTH are lexicalized, and their etymology reflects in no way the present settlement pattern in the area. (Batibo, p.c., Aug. 2006). Today, the Sukuma live North of the Bianjida and the Takama South of them. The discrepancy between etymology and current meaning of the direction terms indicate that these terms were lexicalized before the groups under consideration moved to their current areas.

2.7 History related features

A particularly valuable result of our investigation is the discovery of cardinal directions in Maasai which are nomenclaturally related to the history of the speakers. It cannot be denied, however, that Maasai is not the only African language where such conceptual source is found. Brauner (1998:27) discusses it by with regard to Shona.

The Maasai, who for a long time expanded from North to South, name the SOUTH ‘fight, war’ *o’meroi* (38). This in memory of the fact that their migration was accompanied by steady fights against the autochthonous population, the *e1-meg* ‘the outsiders’.

- (38) Maasai *o’meroi*
 (Nil.) fight, war
 South (Merker 1910:207)

3. Conclusions

We have demonstrated that there is a great variety of designation systems for cardinal directions in both Nilotic and Ubangian languages. The higher importance of EAST and WEST against NORTH and SOUTH as postulated by Brown (1983) and Heine (1997) has been confirmed. The same is true with the relation of EAST to the sun, and that of NORTH and SOUTH to annual winds. In particular with regard to the sun it could be shown that, in contrast to the statements by Brown and Heine, bodyparts play a considerable role in the creation of directions terms. Most frequently bodyparts are connected to the sun. 'Face' and 'eye' are always related to EAST, while 'foot' and 'buttocks' are neutral to orientation. In order to create direction terms, bodyparts can, more strikingly, also be ascribed to the firmament and to the earth. Winds play a role not only in the interlacustrine area, but also further North, in the Bahr el Ghazal. In Dinka and Shilluk winds and seasons constitute the conceptual source of the terms for NORTH and SOUTH. Reference to neighbours, i.e. the use of ethnic names as the basis of direction terms is an infrequent pattern in Africa. It was found only in one of the languages investigated.

Deictic orientation has been proved to be fairly common in Africa. The BACK-FRONT axis, documented in Ngbandi, Bari and Dinka, has either the sun or the earth as a deictic centre. In LEFT-RIGHT orientation, widely used in the West Nilotic, but not in any Ubangian language, the body of reference is a river, the outflow of which is equated to the line of vision of a person. A third deictic axis, not mentioned by Brown and Heine, is ABOVE-UNDER. It is known only in Ngbandi where WEST is referred to as 'under the sun'.

It is not really astounding that there are no direction terms borrowed from Ubangian to Nilotic languages or vice versa given that their contact is not even 150 years old. It is rather striking that even within the two groups we do not find direction terms shared by larger subgroups either as inherited systems not as a result from borrowing. It is evident that single linguistic groups tend to develop their own systems of cardinal directions independent. The Western Nilotic languages are exceptional in that they all use LEFT-RIGHT deictic expressions which are based on the flowing directions of the Nile and its tributaries. But due to different flowing directions in the various settlement areas the specific direction systems differ.

The fact that linguistic groups tend to create their own distinct cardinal direction systems leads to the assumption that cardinal directions is hardly ever a topic of discussion among people of different linguistic origin. Direction terms like the one in Ngbandi (ex. 37) denoting WEST by reference to a relative small village make it conceivable that such terms are not part of a standardised orientation taxonomy, but rather spontaneous creations.

Even Christian missionaries who stayed with ethnic groups for many years and were well acquainted with the language give hardly any information on cardinal directions. This is a further indication that geography and travelling were not discussed by reference to cardinal directions. The necessity for exactly locating places by means of cardinal directions results from the foundation of nation states who for the control of their territories depend on geometrically exact land surveying and cadastres. It is only with the introduction of schools and geography education that the system of the four cardinal directions became widely known.

We hesitate, however, to have Brown's claim confirmed that knowledge about cardinal directions is a fairly recent factor in many parts of the world. All we know is that the scientific cardinal directions are a recent introduction in most African countries.

Notes

- * An earlier version of this paper was presented at the WOCAL 2006 in Addis-Abeba. We are very much indebted to Anne Storch, Franz Rottland and Bernd Heine for providing unpublished data and valuable details on Nilotic languages. Paulette Roulon-Doko did so with regard to Gbaya for which we also express our deeply felt gratitude. We thank Yvonne Treis and Dirk Otten for carefully reading this paper, and many useful critical remarks. All weaknesses are, however, our own.
- ¹ In current geographical terms there are only two main cardinal directions EAST-WEST and NORTH-SOUTH, EAST and WEST, and NORTH and SOUTH all of them being called orientations of the respective directions.
- ² "Die Sonne markiert nicht nur den Tag als Zeiteinheit, sondern auch das Jahr als sichtbare Linie am Horizont. Vom festen Standpunkt aus beobachten Tugen-Astronomen die aufeinander folgenden Sonnenaufgänge am Horizont im Osten. Wie auf dem Zifferblatt einer Uhr legen sie am Horizont eine Art Visierlinie fest, in der sie die einwandernden Orte des Sonnenaufgangs mit besonders hervorragenden Punkten am Horizont verbinden. Einige dieser Punkte nennen sie 'die Häuser der Sonne'. Die Endpunkte der Linie im Süden nennen sie 'das obere Haus' und den entgegen gesetzten Endpunkt im Norden 'das untere Haus der Sonne'. Manche Tugen-Astronomen halten in der Mitte der Linie noch einen weiteren Ort fest, den sie 'das mittlere Haus der Sonne' nennen." (Behrend 1987:18f)
- ³ With regard to this compound noun Canon & Gore 1931 give 'interior' as the equivalent of *bangiri*, which originally is the bodypart term for 'eye'.
- ⁴ Heine (1997:45), e.g. demonstrates the conceptual shift from landmark to spatial region on the basis of a scenario where the landmark 'sky' constitutes the source for 'top', which again is the source for 'on', 'above'. In our terminology, 'sky' is not categorized as a landmark but as an environmental feature or a celestial body, which lacks the particular location to serve as a landmark. The first is used with respect to geographical characteristics as 'up-hill', 'downhill', 'mountainous', 'lowland' and the second with respect to particular places, e.g. 'Mount Elgon', the one river nearby, e.g., 'the Nile', certain towns or villages, salient objects (trees, rocks, fountains, calderas). We are, however, aware that the two categories are on the antipodal ends of a continuum and that there is an area of overlap.

Abbreviation list:

CAR	Central African Republic	PREP	preposition
DR	Democratic Republic [of Congo]	REL	relative marker
HAB	habitual	SM	subject marker
NEG	negation marker	Ub.	Ubangian
Nil.	Nilotic	W/N/S	West, North, South
POSS	possessive marker		

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