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"I GO DOWNSTREAM, AND YOU GO TOWARD THE SNOWSTORM": EXPRESSIONS OF CARDINAL DIRECTIONS IN NGANASAN AND DOLGAN¹

This corpus-based study is dedicated to the topic of spatial orientation in two genetically unrelated but geographically neighboring languages, Nganasan and Dolgan. Nganasan belongs to the Northern-Samoyedic branch of the Uralic language family, while Dolgan is a Turkic language. The Dolgans reached the peninsula later than the Nganasan and inhabited rather the eastern part. The goal is to typologically examine the linguistic realization of the directions of the so-called compass orientation. This is a very well-known fact that many indigenous languages, including many languages spoken in Siberia, do not know compass orientation. According to Brown (1983), speakers of many indigenous languages use three or only two cardinal points, however, in many languages, the speakers do not necessarily use the names of the compass direction but apply other concepts for expressing spatial directions. Brown (1983) identifies several sources of lexemes expressing the cardinal points, such as celestial bodies, which is the most often used source. It also occurs in the Samoyedic languages, e.g. in Selkup, but as we will see, not in the closely related Nganasan. Atmospheric features such as wind, seasons, blizzards, or environment-specific features such as a mountain, forest, or tundra can be metaphorically extended, thereby acting as the conceptual source of cardinal directions. The study follows Brown's typologization and tries to classify the results into their typological categories. We will find similarities and differences between the two languages regarding the conceptual sources. Both languages rely on the so-called landmarks for orientation in the surrounding areas, such as tundra, forest, river, or mountain, but beyond that, Nganasan uses other, non-common categories as well. These reflect a connection to their way of life; thus, it can be interpreted as a culture-specific source, which in turn has its origin in the environment. In contrast, the Nganasans do not use rivers as orientation points at all, although they live partly on the same rivers. Also typical only for the Nganasan is the use of atmospheric features a conceptual source. It does not play a role in any way in the Dolgan.

Key words: *Nganasan, Dolgan, cognitive linguistics, spatial orientation*

Introduction

In most of the languages spoken in Europe, the speaker uses the names of the compass direction to express the main cardinal directions, thus the four cardinal points: EAST and WEST, as well as NORTH and SOUTH. Additionally, there are eight intercardinal directions: west-northwest (WNW), north-northwest (NNW), north-northeast (NNE), east-northeast (ENE), east-southeast (ESE), south-southeast (SSE), south-southwest (SSW), west-southwest (WSW). There are shown in figure 1.

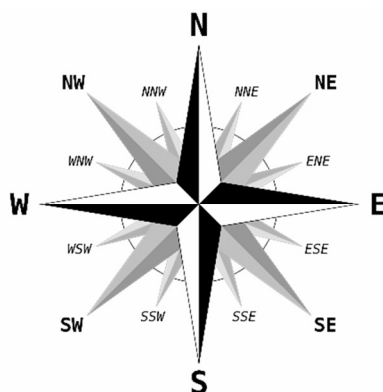


Figure 1. Compass rose²

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² https://en.wikipedia.org/wiki/Cardinal_direction#/media/File:Brosen_windrose.svg [Brosen~commonswiki, CC BY-SA 3.0 <<http://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons].

However, many indigenous languages in Africa, Australia, or even Siberia use three or only two cardinal points (cf. Brown 1983). Moreover, these languages do not necessarily use the names of the compass direction but use other concepts for the spatial direction. Brown (1983) identifies several sources of lexemes expressing the cardinal points, such as celestial bodies, atmospheric features, environment-specific features, deictic systems, etc.

Celestial bodies as the source are used in many languages, among them some Uralic languages. For example, the source of EAST and WEST in Hungarian (*kelet* vs. *nyugat*) is a celestial body. The reference to these cardinal points is the rising and setting of the sun: *felkel a nap* ‘the sun is rising’ vs. *lenyugszik a nap* ‘the sun is setting’. Brown (1983: 130) pointed out that the terms SOUTH and NORTH also can be expressed by a celestial body, but not as often as the cardinal point EAST and WEST: As we will see below, celestial bodies as the source are used neither in Nganasan nor in Dolgan.

Atmospheric features can act as the source of cardinal points because these features are invariable, thus their referents can be associated with directions. It is a well-known phenomenon that for example, the wind from the north brings coldness (e.g., Brown 1983: 132). Brown (1986: 132) as well as Mietzner and Pasch (2007: 26) observed that such terminology usually is used for the terms NORTH and SOUTH. In Shilluk (spoken in South Sudan) the term north is related to wind, e.g., *wàŋwùudɔ* [opening westwind] ‘North’ (Mietzner and Pasch 2007: 26).

Environment-specific features as sources involve references that point to landmarks, such as mountains, cliffs, rocky places, sea, or even the mainland and so on. It is used not only in the languages of Africa, but we can find examples in the Uralic languages as well. For example, in Finnish, the word *meri* ‘sea’ according to the relative position of the village and the sea can mean EAST, SOUTH, WEST, NORTHWEST, or SOUTHWEST (cf. Beöthy 1967: 204). This feature is less frequently used as celestial bodies and atmospheric features.

As a fourth group, but involving several sub-units, Brown (1983: 134) identifies the so-called general direction terms. One of the subgroups is the deictic orientation. In this system, the speaker uses either the object-centred coordinate system or the viewer-centred system. These systems have the following reference points: TOP (superior) vs. DOWN (inferior); FRONT (anterior) vs. BACK (posterior); LEFT vs. RIGHT, and IN (interior) (cf. Heine 1997: 37). This orientation system can be observed in Masaai. The Matapato Masaai and the Kisonko Masaai live on the two sides of Kilimanjaro Mountain. The group of the Matapato Masaai lived in the south and used the words *kópikop* ‘bottom’ for the NORTH, and *shúmata* ‘top’ for the SOUTH. The Kisonko use these two lexemes with the opposite meaning. The explanation is that both groups use the mountaintop as a reference point. However, for one group this is SOUTH, but for the other group, the direction is NORTH (cf. Mietzner 2012: 168). Additionally, the river also can serve as orientation (upriver vs. downriver). This is, for example, to find in Selkup, in which upward denotes the concept of NORTH and downward the concept of the SOUTH (cf. Kuz'mina 1977: 73 or Budzisch & Kahrs 2021). Additionally, in some languages, such as Hawaii, the body also serves as a source of cardinal points. The left side denotes the SOUTH, while the right side the concept NORTH.

2. Language data under investigation

Nganasan belongs to the Samoyedic branch of the Uralic languages. In contrast, Dolgan, which is closely related to Sakha (Yakut), belongs to the group of Turkic languages. They migrated in the first half of the 17th century to the Taimyr peninsula, which was already settled by the Nganasans (cf. Stachowski 1996, Däbritz 2021: 10–12). For this reason, the Nganasans and Dolgans have had closer contact since that time. In particular, it applies to the eastern part of the peninsula.

The theme of the cardinal orientation is not yet sufficiently explored in Nganasan and Dolgan. In Nganasan, the first good outline has already been presented by Lambert (2002/03: 99–103), even if the analysis given there naturally does not cover everything. Lambert's description is based on

Dolgikh's unpublished manuscripts, which are preserved in the Archive of the Institute of Ethnology and Anthropology in Moscow. Dolgikh's work is also considered here³ and his conclusions are also noted here. Additionally, other important sources such as the Nganasan-Russian-Nganasan school dictionary (Kosterkina et al. 2001), from which the basic terms were extracted and checked, and the fieldwork materials from me, Maria Brykina, Valentin Gusev, and Sándor Szeverényi are also used. These latter materials contain elicited data. The most important source for this study is, however, the unpublished extended version of the Nganasan Spoken Language Corpus (Brykina et al. 2018), from which the data are extracted. This version contains circa 1,000 sentences (about 11 transcripts) more than the published version. Table (1) gives the basic information about the extended corpus (for more about the corpus, see Wagner-Nagy et al. 2018).

Table 1

Basic information on the NSL Corpus

Number of utterances:	23,865
Number of words (tokens):	155,245
Number of words (types):	37,609
Number of transcripts:	188
Number of speakers:	39

This topic is also not unexplored in Dolgan. The most important works are Stachowski's (2010) and Däbritz's (2021: 480–484) studies, in which the authors analyze the system and origin of the terms of cardinal points. Stachowski gives additional information about the origin of the terms. The examples in this study are taken from the INEL-Dolgan corpus (Däbritz et al. 2019). Table (2) gives the basic information.

Table 2

Basic information on the INEL-Dolgan Corpus

Number of utterances:	11,367
Number of words (tokens):	77,555
Number of words (types):	37,609
Number of transcripts:	116
Number of speakers:	61

The examples given here refer to one of the corpora following the pattern <speaker code>_<year>_<text_title>_<genre_code>.<sentence_number>. According to this scheme the name TKF_990812_EvilSpirit_flkd.004 means: this is the fourth sentence in a folklore text dyurymy ‘Evil spirit recorded on 18 December 1999 from the speaker TKF. For this study, I have adapted both the glosses and the translations, and the orthography is also modified.

3. Cardinal orientation in Dolgan and Nganasan

The system of cardinal orientation terminology in Nganasan and Dolgan is different from the system used in most European languages. The people on the Taimyr peninsula, of course, did not know an absolute system in the past, which is named after the orientation of the compass. In lieu thereof, they used landmarks for orientation in the surrounding areas, which have a connection to their way of life. Both the Nganasans and the Dolgans earlier led a semi-nomadic way of life and wandered in the spring (around April) from the wooded area (i.e., from the southern part of

³ I got access to this manuscript through J.L. Lambert and Valentin Gusev. I would like to thank my colleagues for the nice, collegial cooperation.

the Taimyr Peninsula) to the north, to the tundra area, and in late summer back to the winter camps. For the naming of the two main directions of the wandering route they use the words ‘tundra’ and ‘forest’, thus here reflecting the ecosystem of the territory as well as the migration route of the people. In Nganasan, according to the dictionary (Kosterkina et al. 2002), several names are expressing the NORTH and SOUTH axis, but as the table shows, the WEST– EAST axis is missing. The system in Dolgan is also complicated, with the words of Stachowski (2010: 234), “nothing but chaos”. At first glance, one could also claim something similar about Nganasan. Table 3 gives the lexemes from the two languages. The origin(meaning) of these terms is also given. The Nganasan data are extracted from the dictionary, the Dolgan data are taken from Däbritz’s description (2021: 483).

Table 3

Cardinal point in Dolgan and Nganasan

	Nganasan	origin	Dolgan	meaning
NORTH	<i>d'aŋur</i>	‘tundra’	<i>muora</i>	‘tundra’
	<i>siŋ</i>	‘sacral place in the tent’	<i>allara:</i>	‘down, downwards, downriver’
NORTH-EAST	<i>ŋarmi</i>	‘northeast wind’	—	—
NORTH-WEST	<i>siŋ</i>	‘sacral place in the tent’	—	—
SOUTH	<i>muŋku</i>	‘forest’	<i>hoguru:</i>	‘south’
	<i>ŋua</i>	‘entrance’	<i>ta:s</i>	‘stone’
	—	—	<i>üöhe (ü:he)</i>	‘up, upwards, upriver’
SOUTH-EAST	<i>ŋua</i>	‘entrance’	—	—
SOUTH-WEST	<i>koðu</i>	‘blizzard’	—	—
WEST	—	—	<i>ha:pat,</i>	‘west’
	—	—	<i>muora,</i>	‘tundra’
	—	—	<i>üöhe (ü:he)</i>	‘up, upwards, upriver’
EAST	—	—	<i>allara:</i>	‘down, downwards, downriver’
	—	—	<i>ta:s</i>	‘stone’

The Dolgan *ha:pat* is a Russian loan element (Stachowski 2010: 237), thus it is not considered further here. The word *soguru:* is also a borrowing, however, not from Russian but from Yakut (Stachowski 2010: 237). For this reason, this word will also not be examined further. Both Stachowski (2010: 237) and Däbritz (2021: 484) concluded, when looking at the Dolgan data, that the words do not represent the primary cardinal point, but the inter-cardinals, thus the system is as given in Table 4. The same conclusion can be made about the Nganasan, but as it can be seen, Nganasan has two lexemes each for the meaning NORTH-WEST and SOUTH-WEST.

Table 4

Inter-cardinal point in Dolgan and Nganasan

	Nganasan	meaning	Dolgan	meaning
NORTH-EAST	<i>ŋarmi</i>	‘north-east wind’	<i>allara:</i>	‘down, downwards, downriver’
NORTH-WEST	<i>siŋ</i>	‘sacral place in the tent’	<i>muora</i>	‘tundra’
	<i>d'aŋur</i>	‘tundra’	—	—
SOUTH-EAST	<i>ŋua</i>	‘entrance’	<i>ta:s</i>	‘stone’
SOUTH-WEST	<i>koðu</i>	‘blizzard’	<i>üöhe (ü:he)</i>	‘up, upwards, upriver’
	<i>muŋku</i>	‘forest’	—	—

As table 3 shows, Dolgan and Nganasan use landmarks (river, tundra, forest, and stone) for orientation in the surrounding areas, which have a connection to their way of life. The naming depends on the axis and the surrounding area. Additionally, in Nganasan, we find atmospheric features

as a source of orientation terms as well as culture-specific features, which can be classified as a subcategory of atmospheric features. Again, Dolgan uses the riverine system, but this is not found in Nganasan.

3.1. Environment-specific features as a source

As it was described in §3 above, people living on the Taimyr Peninsula used to lead a semi-nomadic way of life. For the naming of the two main directions of the wandering route the Nganasans use the words 'tundra' and 'forest', while the Dolgans the words 'tundra' and 'stone'; thus, the naming convention reflects the ecosystem of the territory as well as the migration route of the people. The ecological boundary between the forest and tundra region, however, does not fully correspond to the NORTH-SOUTH direction, but it is inclined about 30% south-west to north-east (cf. Dolgikh n.d. Ge: 4–5 or Lambert 2002/03: 99–100). It corresponds approximately to the course of the Khatanga River, along which both peoples have nomadized. This means that the direction to the tundra does not correspond exactly to the direction north, but rather NORTH-WEST, the forest side correspondingly SOUTH-EAST.

Sentence (1a-b) shows the Nganasan terms, which are usually used only regarding wandering. For this reason, one must assume that they are not primarily used for cardinal orientation, but that their use is limited to the wider environment. In other contexts, for example, when two objects must be put concerning each other, or for static local expressions that have nothing to do with the forest or tundra, the speakers use other expressions (see in §3.2 below).

- (1) a. *muŋku* *d'a* *suəʔ-ku-muʔ* *talʉ*
 forest.GEN ALL wander-IMP-1PL other.day
 'Let's go to the forest/south-east tomorrow.'
 TKF_990812_EvilSpirit_flkd.118
- b. *suə-tə-bahu-muʔ* *ŋansə* *d'aŋur-u-ʔ* *d'a*
 wander-FUT-REP-1PL again tundra-EP-PL.GEN ALL
 'He says we will go to the tundra / north-west (side).'
 JAB_060901_TwoTents_flkd.034

For the expression of the directions or the static location in Nganasan, either the relator noun *ŋii* 'direction' inflected with the corresponding ancient case suffix can be used, or it is also possible to express the same direction with the inflected form of the word *kəi* 'side'. In this case, the word *kəi* 'side' appears with the corresponding suffix immediately after the word *ŋiidə*. Some speakers use the word *bəbə* 'place' instead of *kəi*. The lative direction can also be expressed with the allative postposition *d'a*. Additionally, Lambert (2002/04) states that the expressions *d'alɪ ŋiidə* 'side of the day' and *kou ŋiidə* 'side of the sun' can also refer to the direction SOUTH-EAST. The northern side can also be referred to by the expression *hii ŋiidə* 'side of the night'. These designations have a religious background. In the Nganasan myths, the 'side of the forest' is associated with the sun and other southern spirits, while the 'side of the tundra', thus the northern side, refers to the world of the dead (see, e.g., Dolgikh 1976). However, these terms are no longer present in the more recent texts. Therefore, we can assume that these expressions are specific and have been used only in mythological texts. Chart (7) summarizes the expressions of the direction with the corresponding direction indicator.

(2) direction	Lative	Locative	Elative
north-west	<i>d'aŋuruʔ ŋii</i> <i>d'aŋuruʔ d'a</i>	<i>d'aŋuruʔ ŋiini</i> —	<i>d'aŋuruʔ ŋiidə</i> —
south-east	<i>muŋku ŋii</i> <i>muŋku d'a</i> <i>d'alɪ ŋiidə</i> <i>kou ŋiidə</i>	<i>muŋku ŋiini</i> —	<i>muŋku ŋiidə</i> —

(Source: elicitation by Maria Brykina in 2006 from PED, Kosterkina et al. 2001, Lambert 2002/04 NSL corpus)

As table 3 shows, the Dolgans use the term *muora* ‘tundra’ and *ta:s* ‘stone’. This is illustrated by examples (3a–b).

- (3) a. *min* *i:* *beje-m* *törö:-büüt* *hir-i-m* *bi* *diek* *e-t-e*
 1SGPRO and self-1SG be.born-PTCP.PST earth-EP-1SG this to be-PST1-3SG
muora *diek* *ol* *diek* *Nos-* *kim* *diek* *e:* *onton*
 tundra to that to who to eh then
iri:mnaj *oŋuor-gutu-gar* *iti*
 Novorybnoe on.the.other.shore-2PL-LOC that
 ‘My place of birth was there, to the north, there, to whatchamacallit, eh, opposite to Novorybnoe.
 UKET_AkEE_19940424_SongsTales_conv.UkET.001
- b. *muora* *diek* *törö:-büüt-ü-m* *onton* *er-ge* *bar-am-min*
 tundra to be.born-PST2-EP-1SG then husband-DAT go-CVB.SEQ-1SG
ta:s *diek* *hir-dem-mit-i-m*
 stone to earth-VBLZ-PST2-EP-1SG
 ‘I was born in the north, and having been married, I lived more southwards.’
 UKET_AkEE_19940424_SongsTales_conv.UkET.002

In example (2a), the narrator names his birthplace in relation to the tundra (NORTH) and the place Novorybnaya, which is located on the shore of the river Khatanga. The direction is not absolute, ergo it does not mean an absolute orientation towards NORTH, but rather a relative orientation in an area. That means that the speaker is born somewhere on the other side of the river, approximately in the north-west direction.

In (2b), the same narrator gives information about where he lives; the place he names as the direction of the stones. The word ‘stone’ is often associated in Siberian languages, including the Russian variants spoken in Siberia, with the word ‘mountain’. Depending on the region and language, it can also indicate different directions, e.g., in Yukaghir it means EAST. The motivation for this is the fact that the right bank of the river Yenisei is stony. The situation with the Dolgans is something else. Here we are not talking about the Yenisei River, but the river Khatanga. While the left bank of the river is a tundra area, the right bank further south is a rocky area. This is where the Dolgan term *ta:s diek* ‘southwards’ comes from. Just as in Nganasan, it means not a single cardinal point, but a territory, which lies approximately in the south-western direction.

3.2. Atmospheric features as a source

Two important winds dominate the weather on the Taimyr Peninsula. The wind that blows from the south-western side brings blizzards and rain (Ngan. *koðu?* ‘blizzard’). In the traditional dwelling areas of the Nganasan, this is also the side where the town of Dudinka is located. This town is called *Koðuta?a* ‘big blizzard’ in Nganasan. From the opposite side blows the north-eastern wind *ŋarmü* or *ŋarmi*, which brings cold air. The use of these terms is shown by examples (4a–b).

- (4) a. *tə* *hüə-tə* *tondiq-či-ti* *kurəgüi?* *kotuðə*
 well year-LAT lie-DRV-CO.3SG even blizzard.GEN
ñii-ðə *biə-ði* *tu-u-?ə*
 direction-ADV.ABL wind-3SGPOSS come-EP-CO 3SG
 ‘He is lying all the time, here is the wind blowing from the south-west side.’
 MVL_090807_Bebtie_flk.150

b.	<i>takəə</i> that.remote <i>tu-u-ʔə</i> . come-EP-CO.3SG 'From the north-east side the sledge came.' JAB_060901_TwoTents_flkd.200	<i>ɣarmü-ðə</i> north_east.wind-ADJZ	<i>ɳii-ðə</i> direction-ADV.ABL	<i>inšüðə</i> sled
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As we saw above, when a Nganasan speaker talks about wandering, the direction is given in relation to the tundra and the forest, or even in relation to the wind. In other contexts, for example, when two objects have to be put in relation to each other, or for static local expressions that have nothing to do with the forest or tundra, the speakers use other expressions. These are based on the structure of the tent, thus the conceptual source of this scheme involves culture-specific terms, such as Nganasan *siŋ* 'sacral place opposite the entrance' and *ɣua* 'door, entrance'.

For decoding these directions mentioned with the lexemes given above, the hearer must have background knowledge about the way of life. In the winter, the entrance (*ɣua*) of the tent was always arranged in the direction of the forest, thus on the southern-east side. Accordingly, the opposite sacral place (*siŋ*) was oriented towards the tundra, thus on the north-west side. The reason for this positioning is the wind. The spatial alignment of a tent is schematically shown in Figure 2 (for more details, see, among others, Popov 1948 and 1966).

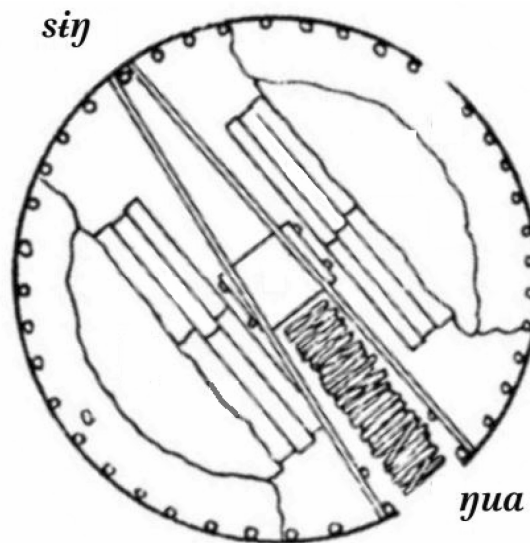


Figure 2. The arrangement of the Nganasan tent (based on Popov 1948: 87, modified by Laetitia Lilla Wagner)

Basically, in Nganasan, we have an OUTSIDE and an INSIDE system that indicates the same direction. In the OUTSIDE system, the reference points are the 'forest' and the 'tundra' (see examples 1a–b above). In the INSIDE system the reference points are the 'sacred place' and 'entrance'. Examples (5a–b) illustrate the use of the INSIDE-system.

(5) a.	<i>bəðürbüə-ðu</i> tomb-POSS3SG <i>i-ču</i> be-CO.3SG 'His tomb is in the north.' KH-KNT_960810_Ngindjili_conv.019 (KH)	<i>əmə</i> this	<i>siŋ-ə</i> sacral.place-EP.GEN	<i>ɳii-ni</i> direction-ADV.LOC
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- b. *ñemiʔiä* *ɲua* *ñii-dʔa* *kai-tani* *i-süä-ʔ*
 big.river.GEN entrance.GEN direction-ADJZ.GEN side-LOC be-PST-3PL
mənə *siŋ-a-ni-a* *kai-də* *heðiti-ndi-m*
 1SGPRO sacral.place-EP-LOCZ-ADJZ side-ABL.ADV go-CO-1SG
 ‘The camp was on the river in the south-east and I came from the north-west.’
 ChNS_080302_Bear_nar.055

In the examples given so far, there was only one reference object, the EARTH. However, there are examples in which the frame of reference involves a so-called secondary reference object. In example (6) the so-called FIGURE, which is placed in the scene, is the hill (*hoñdʔajsi*). The object which serves to describe the location of the FIGURE is called a reference object (or GROUND). In this sentence, this is the ‘tent’ (*maʔ*). However, here there is an additional object, the secondary reference object, which is, in this case, the EARTH, which is implied only by the spatial expression “*south side of*”. The direction is expressed with the terms of the INSIDE system. (For spatial scenes see Talmy 1983: 102, 2000: 101).

- (6) *maʔɲuna* *tahariabə* *əməniə* *maðu-nuʔ* *ɲua* *ñii-dʔa*
 what.for now this.GEN tent-GEN.POSS1PL door.GEN direction-ADJZ.GEN
kai-tə *hoñdʔajsi* *maa-güə* *i-süä*
 side-LAT hill what-EMPH be-PST.3SG
 ‘There was a hill on the south side of our tent.’
 TKF_031117_ThreeBrothers_flkd.283

The situation is similar in example (7). The figure is here the Hermine, which is however lexically not present in the sentence. The primary object is the ‘fire’, while the EARTH is implied by the spatial expression ‘*north side of*’.

- (7) *təti-rə* *tahariaa* *tu-u* *siŋ-a* *ñii-dʔa*
 this-POSS2SG now fire-EP.GEN sacral place-EP.GEN direction-ADJZ.GEN
kai-tə, *siŋ-tə*, *əmiʔiä* *heðü-ʔə* *i-bahu*
 side-LAT sacral.place-LAT in.this.way stand.uprightt-CO.3SG be-REP.3SG
 ‘(The ermine) ducked to the north side of the hearth, to the sacral place (and) stood on her hind legs.’
 TKF_041210_NenetsManAndGiant_flkd.032

The relator nouns and the allative postposition can also be used concerning these terms. This is summarized in chart (8).

- | (8) | direction | Lative | Locative | Elative |
|-----|------------|---|--|---|
| | north-west | <i>siŋə ñii dʔa</i>
<i>siŋə ñii</i>
<i>siŋə ñiidʔə kaitə</i> | <i>siŋə ñiini</i>
—
<i>siŋə ñiidʔə kaitəni</i> | <i>siŋə ñiidə</i>
—
<i>siŋə ñiidə kaidə</i> |
| | north-east | <i>ɲarmüdə ñii</i>
<i>ɲarmüdə ñiidʔə kaitə</i>
<i>ɲarmüdə ñii dʔa</i> | <i>ɲarmüdə ñiini</i>
<i>ɲarmüdə ñiidʔə kaitəni</i>
— | <i>ɲarmüdə ñiidə</i>
<i>ɲarmüdə ñiidə kaidə</i>
— |
| | south-east | <i>ɲua ñii</i>
<i>ɲua ñiidʔə kaitə</i>
<i>ɲua ñii dʔa</i> | <i>ɲua ñiini</i>
<i>ɲua ñiidʔə kaitəni</i>
— | <i>ɲua ñiidə</i>
<i>ɲua ñiidə kaidə</i>
— |
| | south-west | <i>kotuðə ñii</i>
<i>kotuðə ñiidʔə kaitə</i>
<i>kotuðə ñii dʔa</i> | <i>kotuðə ñiini</i>
<i>kotuðə ñiidʔə kaitəni</i>
— | <i>kotuðə ñiidə</i>
<i>kotuðə ñiidə kaidə</i>
— |

(Source: elicitation by Maria Brykina in 2006 from PED, Kosterkina et al. 2001, NSL corpus)

3.3. Riverine system as a source

In the riverine system, the primary axis is oriented parallel to a river, distinguishing upstream and downstream directions. This system is not uncommon in languages of the word, thus it can be found in languages spoken in Siberia, for example, in Sakha, and, as we have seen in table 3 above, the closely related Dolgan.

In Sakha, the direction SOUTH (*soghuruu*) is etymologically related to the word upstream, and the word NORTH (*khotu*) originally meant 'downward or downstream' (Mészáros 2014). The same system is used in Dolgan, in which the word pair *upwards* and *downwards* denote rather the EAST and WEST axis. Example (9) shows a Dolgan example.

- (9) [„Hey, Chagyday, bring this letter to whatchamacallit, to Kresty, to Kresty at Novorybnoe.”
Look, how far away, at the other side of Novorybnoe. – Who says that, does Begichev say that? – No. His people.”

he: *Biegičep-tere* *h-onon* *ajanna:-bit* *buał-l-a* *ol*
yes Begichev-POSS3PL EMPH-the travel-PTCP.PST be-PST-3SG thet
bar-i:t-i-nan *bar-bit* *bu* *diēk* *ü:he* *diāk*
go-PTCP.PST-POSS3SG-INSTR go-PST2.3SG this to up to
'Yes, and Begichev departed at once, driving so he drove in this direction, upwards.'
KiPP_KuNS_2002_LegendOfBegichev_nar.058

To interpret this sentence correctly and understand the directions, on the one hand, one has to look at the map, on the other hand, one has to look at the whole text. For the hearer, two pieces of information are important: a) where is Begichev now and b) where is the village Kresty. Begichev, the protagonist of the text, travelled this area and was either on Bolshoy Begichev Island or on Maly Begichev Island, which are located within the Khatanga Gulf. From here, the protagonist should travel towards Novorybnoe. If we look at it on the map, the direction is, roughly, the southwest direction. It means that the direction 'upwards' corresponds to the inter-cardinal point 'south-west'. The opposite direction *allara*: 'down' corresponds to the intercardinal direction 'north-east'. This is shown in Map 1, which shows the position of Bagichev Island.



Map 1. The Khatanga river and the Khatanga gulf⁴

⁴ <https://www.osmap.us/#6/73.475/105.930>

The riverine system is not used in Nganasan, but the closely related Selkup have this system. The adverb Taz *taq*, Vasyugan, Turukhan *taqqi* means not only ‘to the north’, but also ‘downwards’. The corresponding concept NORTH is expressed as *taqqi’ peläk* [downstream-ADJ + side] or *taqqi’ tatti* [downstream-ADJ + earth]. The semantic connection is obvious. The use of this expression is illustrated in (9). (More about the cardinal points in Selkup see among others Polyakova 2006, 2017 and Budzisch & Kahrs 2020).

- (10) *ńari-l’ mači-t takki-l’ peläq-qit takki*
 tundra-ADJ forest-GEN to.the.north-ADJZ side-LOC down.the.river
tĩmti šitti unti-n ɔ:k.
 here two river-GEN mouth
 ‘North of Nyaryl Machi⁵ down by the river are the mouths of two creeks, [there he lived.]
 Kuznecova et al. 1993: 30

Summary

A comparison of the data from the two languages shows that Nganasan has a larger repertoire of lexicalization sources for cardinal directions than Dolgan. As we have seen, although the Nganasans and Dolgans live in the same area, they use typologically different sources of orientation points for their orientation. What is common, however, is that both peoples use environment-specific features as sources. It is also obvious that for the Dolgans the river Khatanga played a much more important role than for the Nganasans, therefore they use the riverine system. The atmospheric orientation, on the other hand, plays no role at all with the Dolgans. One explanation could be that they mainly lived in small houses built on sledges (*balok*) instead of tents. In this case, the orientation of the house was probably somewhat less important than in the case of the tent, whose entrance had to be protected from a snowstorm at all costs. The sun and especially the sunrise do not play a role in the orientation. The typological classification in the two investigated languages is summarized in table (5).

Table 5

Typological classification of sources in Dolgan and Nganasan

source	Nganasan	Dolgan
environment-specific source	NORTH-WEST SOUTH-EAST	NORTH-WEST SOUTH-EAST
atmospheric features	NORTH-EAST SOUTH-WEST	—
riverine system	—	NORTH-EAST SOUTH-WEST

It must be emphasized that the directions given do not represent absolute directions, but a range approximately in that direction.

Abbreviation:

ABL – ablative; ACC – accusative; ADJZ – adjektivizer; ADV – adverbial; ALL – allative; CNG – connegative; CO – coaffix; DRV – derivation suffix; EL – elative; EP – ephentetic; flkd – folklore genre d’urimy; flks – folklore genre s’iteby; FUT – future; GEN – genitive; IMP – imperative; ITER – iterative; INSTR – instrumental; LAT – lative; LOC – locative; NEG – negative auxiliary; PL – plural; POSS – possessive; PRO – pronoun; PROL – prolative; PST – past; REP – reportative; RFL – reflexive; SG – singular; vblz – verbalizer.

⁵ This is the Selkup name of the settlement Krasnoselkup.

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