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“Issues and maize bread taste good when they’re cool”: Temperature terms and their metaphorical extensions in Kambaata (Cushitic)

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Abstract: The present paper is an analysis of the basic and extended meanings of temperature terms and the grammar of temperature expressions in Kambaata (Cushitic, Ethiopia) in comparison to related Highland East Cushitic languages. Globally, Kambaata has a system of two opposing temperature values, ‘cold’ vs. ‘warm’. The lexeme *iib-* ‘be(come) warm’ contrasts with the lexeme *caal-* ‘be(come) (tactile) cold’ in the tactile frame of temperature evaluation, while it contrasts with *gid-* ‘be(come) (non-tactile) cold’ in the domain of ambient (weather) and personal-feeling (inner) temperature. Even though the lexeme for ‘cold’ is shared, the expression of personal-feeling temperature is constructionally different from the expression of ambient temperature. As for the extended uses of temperature terms, Kambaata is shown to conceptualise freshness, spiciness and busyness / increased activity as warmth, excessive thirst and anger as heat. Unlike many other languages in the world, Kambaata does not link warmth to affection. Furthermore, coolness is linked metaphorically to calmness and to the absence of thirst; inactivity, shock, the absence of grief and pain are conceptualised as cold.

Keywords: lexical semantics, temperature, metaphor, Cushitic, Kambaata

1. Introduction

All languages can be assumed to have means to express the sensation of warmth and cold, as exemplified in the Kambaata examples in (1)-(2).

- (1) *Haláab-u iib-a-a*
PN-mNOM warm-mPRED-mCOP2
(Speaker about the climate:) ‘Halaaba (= town in the lowlands) is warm.’
- (2) *Hangácc-u gid-a-a*
PN-mNOM cold-mPRED-mCOP2
(Speaking about the climate:) ‘Hangacca (= town in the highlands) is cold.’

Recent lexical typological works under the direction of Maria Koptjevskaja-Tamm (2015a) have shown that languages differ significantly in (i) how they carve up the lexical field of temperature terms, e.g. some language have a system of only two temperature values (WARM-COLD), while others distinguish up to five values, (ii) whether different temperature term systems are used to evaluate different classes of entities, see that languages have more elaborate systems for the evaluation of water temperature, and (iii) whether different temperature lexemes (or constructions) are used for tactile, ambient (weather) or personal-feeling (inner) temperature. As no

systematic description of temperature terms has so far been attempted for any Ethiopian language and as no Cushitic language has been considered in the existing typological works on the expression of temperature, this paper aims at a detailed account of the semantics (§3) of temperature terms and the morphosyntactic features (§4) of temperature expressions in Kambaata (glottology code: [kam1316](#)), a Highland East Cushitic (HEC) language spoken by more than 600,000 speakers (Central Statistical Agency 2007: 74) in the Kambaata-Xambaaro Zone in the South of Ethiopia. In §5 we also study the metaphorical extensions of temperature terms, and as far as the available literature allows, we provide comparative information on temperature expressions in languages that are genetically related to Kambaata (§6).

The Kambaata zone covers an area whose altitude ranges from below 1500m to above 3000m (Figure 1). The central area of the zone lies at an altitude between 2000m and 2500m. Here the temperatures hardly ever rise above 30°C even in the daytime of the hottest months and never fall below zero in the nights of the coldest months. Occasional ground frost may, possibly, be observed in areas of very high altitude on the Hambarrichcho mountain massif (peak: 3038m).

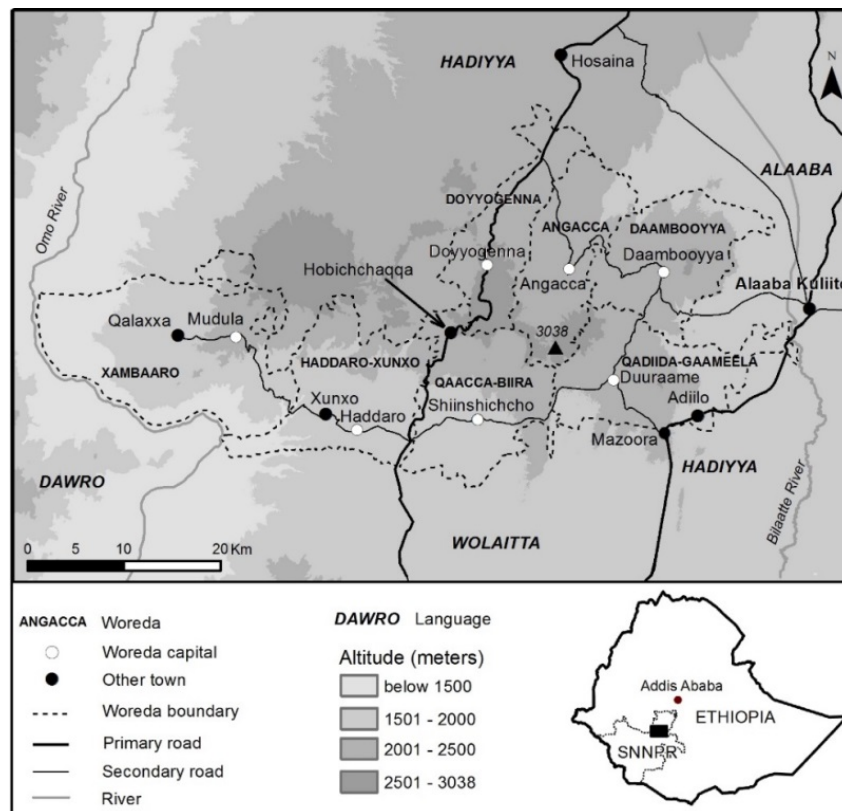


Figure 1. Kambaata-Xambaaro Zone and its districts (*woredas*)
(Map designed by Jérôme Picard, CNRS-LLACAN, 2016; Sources: ESRI, USGS
data.humdata.org; all boundaries are unofficial)

The Kambaata data used for this paper comes from the first author's field work corpus, a corpus of local publications, including Alemu's (2016) Kambaata dictionary, and, most importantly, the second author's native speaker expertise. The data originates predominately from the Qadiida-Gaameela district of the Kambaata-Xambaaro Zone. The collection of supplementary elicited data has been guided and

encouraged by Koptjevskaja-Tamm's temperature questionnaire (2018). If not indicated otherwise, the second author is the source of the examples.

Kambaata data in this paper is presented in the official orthography (Treis 2008: 73-80, Alemu 2016), to which we have added accents to indicate phonemic stress. The following graphemes are not in accordance with IPA conventions: <ph> /p'/, <x> /t'/, <q> /k'/, <j> /dʒ/, <c> /tʃ/, <ch> /tʃ/, <sh> /ʃ/, <y> /j/ and <'> /ʔ/. Geminate consonants and long vowels are marked by doubling, e.g. <shsh> /ʃ:/ and <ee> /e:/.

2. Morphosyntactic overview

Kambaata is of the agglutinating-fusional language type and strictly suffixing. Its constituent order is consistently head-final; the final element in a sentence is usually a fully finite main verb or a copula. The following open word classes can be defined on morphosyntactic grounds: nouns, adjectives, verbs, ideophones and interjections. Kambaata is a nominative-accusative language. The nominative is the subject case; the accusative marks direct objects and certain adverbial constituents, and also serves as the citation form of nouns. Nouns are marked for gender (feminine vs. masculine) and case; nouns (and pronouns) distinguish 9 case forms (Table 1).

Case form	<i>gid-á</i> (m.) '(non-tactile) cold'	<i>quxal-í-ta</i> (f.) 'bitter cold'
Accusative	<i>gid-á</i>	<i>quxal-í-ta</i>
Nominative	<i>gid-u</i> (19) ¹	<i>quxál-i-t</i> (30)
Genitive	<i>gid-í</i>	<i>quxal-é</i>
Dative	<i>gid-íi(-ha)</i>	<i>quxal-ée(-ha ~ -ta)</i>
Ablative	<i>gid-íichch</i>	<i>quxal-éechch</i>
Instrumental/comitative/perlative	<i>gid-íin</i>	<i>quxal-éen</i>
Locative	<i>gid-áan</i> (37)	<i>quxal-éen</i>
Oblique/vocative	<i>gid-a</i>	<i>quxál-e</i>
Predicative (with COP2)	<i>gid-a</i>	<i>quxál-i</i>

Table 1. Case paradigm of a masculine noun (declension M1 in *-á*) and a feminine noun (declension F2a in *-í-ta*)

For the discussion of temperature terms, it is important to highlight some grammatical features of adjectives. In their prototypical use as modifiers in the NP, adjectives show case and gender agreement with the head noun. In this function, three case forms are distinguished: accusative, nominative and oblique (Table 2).

Case form	m	f
Accusative	<i>iib-á</i>	<i>iib-áta</i>
Nominative	<i>iib-u</i>	<i>iib-at</i>
Oblique	<i>iib-a(a)</i>	<i>iib-a(ta)</i>

Table 2. Case/gender inflection of an adjectival modifier (declension A1 in *-á(ta)*)²

The oblique form signals agreement with a non-nominative, non-accusative head noun; see *iib-aa* 'warm' before the locative noun in (3).

¹ The use of some of the word forms presented in this table is demonstrated in the indicated examples.

² All temperature adjectives discussed in this paper are members of the biggest adjectival declension A1 (Treis 2008: 256).

- (3) *Ku háqq-u iib-aa baad-óon xall-áan*
 A_DEM1.mNOM tree-mNOM warm-mOBL land-mLOC only-mLOC
le'-áno-a
 grow-3mIPV.REL-mCOP2
 ‘This tree (species) only grows in warm countries (/areas).’

Adjectives can also become heads of noun phrases. As such, they have the same case-marking potential as nouns and are marked for the nine nominal cases (Table 1). The predicative case is the case of adjectival predicates. As NP heads, adjectives adopt the gender of the omitted head noun; in (4), the adjective *caal-á* ‘(tactile) cold’ is masculine because the missing head noun, *mirind-á* (m) ‘type of soft drink’, is masculine. See also *iib-á* ‘warm (one)’ in (7) and *sigg-á-s* ‘the cool (one)’ in (11).

- (4) A: *Hikka mirind-á aat-tá'nne?*
 A_DEM1.mACC drink_sp-mACC give-2fICO<1sO>
 B: *Hákka-s? A: Caal-á áass-e-'e*
 which.mACC-DEF cold[tactile]-mACC give-2sIMP-1sO
 A: ‘Can you pass on that Mirinda (= soft drink) to me?’ – B: ‘Which one?’ –
 A: ‘Give me the cold (one)!’

Kambaata has not only a large class of basic adjectival lexemes but also several productive derivational mechanisms to create adjectives on the basis of nouns, verbs and ideophones, i.e. the propriative, agentive, resultative, privative, attenuative and simulative derivation (Table 3). None of the temperature terms discussed in any detail in this paper result from derivation,³ but temperature terms can be the input of the attenuative derivation, e.g. *iib-á(ta)* ‘warm’ > *iib-(i)-lab-á(ta)* ‘warmish’.

Derivation	Morphological structure	Example
Propriative	Noun- aam -Case+Gender	e.g. <i>orc-á</i> ‘mud’ > <i>orc-aam-ú</i> ‘muddy’ (m)
Agentive (Treis 2011)	Noun/Verb- aan -Number- Case+Gender	e.g. <i>dimb-</i> ‘be(come) drunk’ > <i>dimb-aan-ch-ú</i> ‘drunkard’ (m)
Resultative	Ideophone- eem - Case+Gender	e.g. <i>dákk=y-</i> ‘be hidden’ > <i>dakk-eem-á</i> ‘hidden’ (m)
Privative	Noun- beel -Case+Gender	e.g. <i>wozan-á</i> ‘heart’ > <i>wozan-beel-ú</i> ‘heartless’ (m)
Attenuative	Adjective/Noun- lab - Case+Gender	e.g. <i>mux-á</i> ‘wet’ > <i>mux-(i)-lab-á</i> ‘a bit wet’ (m)
Simulative	Noun- agud -Case+Gender	e.g. <i>bun-á</i> ‘coffee’ > <i>bun-agud-á</i> ‘coffee-like, coffee-coloured’ ⁴

Table 3. Adjectival derivations

All verbs apart from verbal nouns carry subject indexes. Direct and indirect objects can optionally be expressed by suffixed pronouns at the right edge of the inflected verb; see *-se* 3fO ‘her’ in (5). Verbs inflect for aspect, mood and subordination; see

³ Note, however, that Alemu (2016: 865) lists the propriative adjective *quxal-aam-ú* (f: *quxal-aam-íta*) ‘bitterly cold’, based on the noun *quxal-íta* (f) ‘bitter cold’ (see §3.2.2.3 and fn. 12). In §6, we see that several related HEC languages have temperature adjectives derived from verbs.

⁴ Ex. (42) contains a simulative-derived adjective.

the final perfective main verb (PFV) and the perfective converb (PCO) in (5). The encoding of experiencers by accusative object pronouns is discussed in §3.3.1 and §4.

- (5) (...) *fiit-ichch-óoha-n-s* *sigg-á* *wo'-á*
 flower-SG-fDAT-L-3mPOSS cool-mACC water-mACC
 éebb-i=ké' *ag-ishsh-o-se*
 bring-3mPCO=SEQ drink-CAUS1-3mPFV-3fO
 ‘(...) he brought fresh (/cool) water for his flower and watered her.’ (Saint-Exupéry 2018: 31)

For the ensuing discussion it is important to keep in mind that all simple, non-derived adjectival stems in the language have a corresponding inchoative-stative property verb of the same stem, e.g. *caal*-Case+Gender [ADJ] ‘(tactile) cold’ – *caal*-Subject+TAM [V] ‘be(come) (tactile) cold’. It is unclear whether we should assume that adjectives are derived from inchoative-stative verbs (or vice versa) through conversion or that the word class of property concepts is not predetermined, allowing for both adjectival and verbal inflection (Treis 2008: 269).

3. The semantic field of temperature terms

Before going into the details of our analysis, we first present an overview of the features of the Kambaata temperature system.⁵ The domain-central temperature terms (in the sense of Koptjevskaja-Tamm 2015b: 27) are systematised in Table 4, where Kambaata is seen to have a system of two opposing temperature values, ‘cold’ vs. ‘warm’. Koptjevskaja-Tamm (2015b: 13) distinguishes three main frames (i.e. kinds) of temperature evaluation: (i) **tactile**: evaluation of the temperature of other entities through touching, (ii) **ambient**: evaluation of the atmospheric/air temperature and (iii) **personal-feeling**: evaluation of one’s own inner body temperature (thermal comfort). In the cold domain Kambaata makes a frame-specific opposition between ‘(tactile) cold’ and ‘(non-tactile = ambient and personal-feeling) cold’. Furthermore, both in the warm and cold domain, the expression of personal-feeling temperature is constructionally different from the expression of ambient temperature – even though the lexemes are shared in the two frames. For the expression of tactile and ambient temperature both adjectival and verbal forms can be used, while personal-feeling temperature only allows a verbal construction, namely an underived verb form in the cold domain and a causativised verb form in the warm domain.

‘cold’	‘warm’	Frame of evaluation
<i>caal-á(ta)</i> [ADJ] ~ <i>caal-</i> [V]	<i>iib-á(ta)</i> [ADJ] ~ <i>iib-</i> [V]	TACTILE
<i>gid-á(ta)</i> [ADJ] ~ <i>gid-</i> [V]		AMBIENT
<i>gid-</i> [V] + DO _{Experiencer}	<i>iibb-is-</i> [V-CAUS1] + DO _{Experiencer}	PERSONAL-FEELING

Table 4. Domain-central temperature terms

Apart from the three most central temperature terms given in Table 4, there are a handful of terms that are (slightly or significantly) more peripheral to the temperature domain (Table 5). The two terms above the bold line in the table are frequently attested in our database and widely applicable but always have an inherently negative or positive connotation. We must admit that our decision not to consider these terms as domain-

⁵ The overview simplifies matters a bit. As §3.3 shows, there are several personal-feeling constructions. Only the most central construction is given in Table 4.

central is tentative. The inclusion of *buss-* and *sigg-á(ta) ~ sigg-* into the domain-central terms would significantly alter the typological categorisation of Kambaata and make it a language with a four-value temperature system rather than a language with a two-value system. The terms below the bold line in Table 5 can indisputably be considered domain-peripheral, as they are not frequently attested and restricted in their applicability, as shown in §3.1.

Domain-peripheral terms	Translation	Section
<i>buss-</i> [V]	‘[tactile] burn (tr.); be dangerously, excessively hot’	§3.1.2.1
<i>sigg-á(ta)</i> [ADJ] ~ <i>sigg-</i> [V]	‘comfortably cold or warm, cool’	§3.1.2.2 + §3.2.2.2
<i>gummuut-á(ta)</i> [ADJ] ~ <i>gummuut-</i> [V]	‘[tactile, of liquids] lukewarm’	§3.1.2.3
<i>gic-á(ta)</i> [ADJ] ~ <i>gic-</i> [V]	‘[tactile, of fire] lukewarm’	§3.1.2.3
<i>qabad-á(ta)</i> [ADJ] ~ <i>qabad-</i> [V]	‘[tactile] extremely cold’	§3.1.2.4
<i>quxal-íta</i> [N] ~ <i>quxal-</i> [V]	‘[ambient] bitterly cold’	§3.2.2.3
<i>faar-á</i> [N] ~ <i>faar-</i> [V]	‘[tactile, ambient] extremely hot’	§3.1.2.1 + §3.2.2.1

Table 5. Domain-peripheral temperature terms

In the remainder of the paper, we discuss the meaning and use of the lexemes from Tables 4 and 5 in detail. The following notational conventions are applied for the presentation of Kambaata data in the running text: Adjectives are cited in their masculine accusative form, with the feminine marker added in brackets, e.g. *sigg-á(ta)* ‘comfortably cold or warm, cool’; inflectional and derivational morphology is always separated from the stem by a hyphen. Verbs are cited as stems without inflectional morphology, e.g. *buss-* ‘burn (tr.); be dangerously, excessively hot’. Nouns are given in their accusative form, e.g. *gid-á* (m) ‘(non-tactile) cold’ and *caal-im-áta* (f) ‘(tactile) cold’. As mentioned in §2, each underived Kambaata adjective has a corresponding inchoative-stative property verb of the same stem, which is marked for aspect, mood and subordination and indexed for the subject. If reference is made to a temperature lexeme irrespective of its realisation as adjective or verb, the lengthy citation forms found in Table 4 and 5, e.g. *iib-á(ta)* [ADJ] ‘warm’ ~ *iib-* [V] ‘be(come) warm’, are replaced by a citation form in small caps, e.g. *IIB-* ‘warm’.

In the ensuing analysis of Kambaata we proceed by frame of evaluation: tactile (§3.1), ambient (§3.2) and personal-feeling temperature (§3.3).

3.1. Tactile temperature

‘cold’	‘warm’
<i>caal-á(ta)</i> [ADJ] ~ <i>caal-</i> [V]	<i>iib-á(ta)</i> [ADJ] ~ <i>iib-</i> [V]

3.1.1. Domain-central temperature terms

In the frame of tactile evaluation, the lexeme *IIB-* ‘warm’ is in opposition to *CAAL-* ‘(tactile) cold’, as seen in (6) and (7).

- (6) A: *Kóo, kú-s m-á cáall*
 2mVOC A_DEM1.mNOM-DEF what-mACC be(come)_cold[tactile].3mPCO
bá'-ee-haa kín-u-la!
 get_lost-3mPRF.REL-mCOP2 stone-mPRED-PRAG1
- B: *Ku kín-u iib-a-a,*
 A_DEM1.mNOM stone-mNOM warm-mPRED-mCOP2
isóon-ta-s afíuu'll-i
 3mLOC-L-DEF sit-2sIMP

(A and B are looking for stones on which to rest) A: 'Hey, this stone is terribly cold (lit. this is what (kind of) lost⁶-cold stone)! – B: 'This stone (here with me) is warm, sit on this one (lit. him).'

- (7) *Caal-á wo'-á has-soontí=da gamball-á*
 cold[tactile]-mACC water-mACC want-2sPFV.REL=COND black-mACC
úl-i, iib-á has-soontí=da ammóo
 touch-2sIMP warm-mACC want-2sPFV.REL=COND however
biishsh-á-s úl-i
 red-mACC-DEF touch-2mIMP

(Speaker explaining the use of a washing-basin:) 'If you want cold water, use the blue (lit. black) (tap), if you want warm (water) use the red (tap).'

IIB- 'warm' is also opposed to *CAAL-* '(tactile) cold' when one speaks about hot and cold dishes and hot and cold drinks.

3.1.2. Domain-peripheral temperature terms

Apart from the two domain-central lexemes for tactile evaluation, Kambaata has several lexemes that we interpret as domain-peripheral – either because they are only applied to a certain category of objects, because they are inherently positive or negative, or because they are rare and only used when temperatures are extreme.

3.1.2.1. Dangerously hot

If the temperature of an object is excessive and a person touching this object risks to be injured, the object is qualified with the verb *buss-* 'burn; dangerously, excessively hot' (8). The same verb is used to qualify the body of a child with fever (9).

- (8) *Buss-itáa dist-íta táff=a'-i-yan*
 burn.CAUS1-3fIPV.REL pot-fACC touch=do-1sPCO-DS
ang-á-'i giir-tóo-'e
 hand-fACC-1sPOSS burn-3fPFV-1sO
 'I touched a hot (lit. burning) pot and burnt my hand.'
- (9) *Ka ciil-í ál-u buss-áyyoo'u (*bub-áyyoo'u)*
 A_DEM1.mOBL child-mGEN body-mNOM burn.*(CAUS1)-3mPROG
 'This child is hot (lit. this child's body is burning).'

The verb *buss-* is the causative derivation of the verb *bub-* 'burn (itr.)', which is itself not used for the expression of temperature and considered unacceptable in contexts such as (8)-(9). In the formation of the derived verb *buss-*, the causative morpheme

⁶ The verb *ba'-* 'get lost' has been grammaticalised into an intensifier. It is not restricted to temperature terms.

-(i)s assimilates to the stem-final consonant of the root *bub-*, i.e. **bub-s-* > *buss-*. Although the experiencer is not overtly expressed as direct object argument of *buss-* in (8)-(9), it can be assumed to be the implicit object of the transitive verb. Unlike for all other temperature terms discussed in this paper, no corresponding adjectival form exists for the temperature verb *buss-*;⁷ therefore, a relative verb form needs to be used when the temperature term functions as NP modifier (8). Note that it is not uncommon for languages to have temperature terms from different word classes; see *cold* [ADJ] and *freeze* [V] (Koptjevskaja-Tamm 2015b: 3).

Given that the verb *buss-* is still commonly used with the source meaning ‘burn (tr.)’, as seen in (10), one might question our decision to regard *buss-* ‘burn; be dangerously, excessively hot’ as a genuine temperature term, but the decision is based on the observation that the verb is found in opposition and in the same contexts as other temperature terms.

- (10) *Billaww-á aphph-iti-i xit-á*
 knife-mACC hold.MID-3fPCO-ADD soot-mACC
buss-iti-i ful-táa'u
 burn.CAUS1-3fPCO-ADD go_out-3fIPV
 ‘Holding a knife and burning (a bunch of grass smeared with) soot, she (= the new mother) goes out (to the toilet).’ (EK2016-02-23)

In (11), *buss-* contrasts with the temperature term *sigg-á(ta)* ‘comfortably cold or warm, cool’ (cf. §3.1.2.2) – in an exchange between a child (A) and a mother (B). Both ‘burn (tr.); be dangerously, excessively hot’ and ‘cool’ are used as NP heads in (11); as a verb, *buss-* needs to be nominalised in this context, while the adjective *sigg-á(ta)* is used as NP head without any morphological measures being taken.

- (11) A: *Lam-ínta dist-íta áff dand-aam-ba'íi-'nnu*
 two-fACC<N> pot-fACC take.1sPCO can-1sIPV-NEG.VV-PRAG3
 B: *Wáashsh-i! Buss-ítaa-sí-íta án*
 bring-2sIMP burn.CAUS1-3fIPV-DEF.REF-NMZ1a.fACC 1sNOM
af-áan-ke, sigg-á-s áti-n áf-i
 take-1sIPV-2sO cool-mACC-DEF 2sNOM-N take-2sIMP
 A: ‘I cannot carry both pots!’ – B: ‘Bring (them to me). I carry the (dangerously) hot one for you, and you carry the one that has cooled down.’

Apart from *buss-* ‘burn (tr.); be dangerously hot, be excessively hot’, we also find the noun *faar-á* (m) ‘boiling, extremely hot thing’ in our data. The lexeme is used to characterise drinks as having a temperature that even exceeds a state describable by *buss-*; see the hyperbolic exclamation in (12). The noun *faar-á* shares the stem with the verb *faar-* ‘boil (e.g. of water, coffee)’. The verb is seen in (13) in a statement about alarmingly high fever; compare this example with (9).

⁷ And unlike for other temperature adjectives/verbs, there is no corresponding temperature noun either (see §4.1.1 on temperature nouns). The noun *bub-áta* (f) ‘blaze’ does not seem to be used with the meaning ‘excessive heat’.

- (12) *Ka faar-á hátt=a'-i*
 A_DEM1.mACC boiling_thing-mACC how.IDEO=do-3mPCO
ágg xóoff-o-la!?
 drink.3mPCO finish-3mPFV-PRAG1
 (Speaker is surprised that a child finished a hot drink so quickly and calls out):
 'How quickly did he finish drinking this boiling thing!?'

 (13) *Kánn ciil-í ál-u faar-áyyoo'u*
 A_DEM1.mOBL infant-mGEN body-mNOM boil-3mPROG
 'This child has very high fever (lit. this child's body is boiling).'

3.1.2.2. Comfortably cold or warm⁸

The lexeme *SIGG-* has an unequivocally positive connotation. In order to keep the glosses simple, it is translated as 'cool' in the examples, even though *SIGG-* should not simply be equated with English *cool*. The Kambaata term cannot always be paraphrased as 'a bit cold'. Instead, it is most appropriately translated as 'cooled down sufficiently (for handling, use, consumption); having a pleasant temperature; comfortably cold, refreshing; comfortably warm'. The examples show that *SIGG-* is used for temperatures on the cold and warm end of the scale: In (5) it qualifies the temperature of refreshing water that has just been fetched from a well. In (11) it qualifies the temperature of a cooking pot, which has cooled down sufficiently so as not to be dangerous for a child. *SIGG-* characterises warm food (e.g. soup) or drinks (e.g. tea) that have cooled down a bit after they were prepared on the fire and are ready to be eaten or drunk without burning one's tongue (14). In (11) and (14), *SIGG-* is in opposition to a lexeme expressing extreme heat, in (5) there is an implicit contrast to lukewarm water.

- (14) A: *Ī shah-íta*
 take_from_speaker's_hands.2sIMP tea-fACC
 B: *Ka faar-á hátt=a'-áammi-la?*
 A_DEM1.mACC boiling_thing-mACC how.IDEO=do-1sIPV-PRAG1
afíuushsh-i, sigg-ítun
 put_down-2sIMP become_cool-3fJUS
 A: 'Here, take this tea!' – B (angry): 'What can I do with this boiling thing?!
 Put it here and let it (first) cool down (a bit).'

If food and drinks that are meant to be consumed warm have cooled down too much and are no longer pleasant to consume, they are characterised as *CAAL-* '(tactile) cold' (§3.1.1) or *QABAD-* 'extremely (tactile) cold' (§3.1.2.4); the positive *SIGG-* would be misplaced in this context. In our corpus, *SIGG-* 'cool' is not limited to a particular type of objects. It can qualify the temperature of refreshingly cool water, warm (as opposed to dangerously hot) food, drinks and cooking utensils; shady, cool places; and people's bodies. In the Kambaata schoolbooks the causative verb *sigg-is-* 'cool (tr.)' is commonly used in the context of refrigeration.

⁸ In our analysis of a corpus of local publications, we have noted that the lexeme *SIGG-* 'comfortably cold or warm, cool', both in its basic and its extended use, is not attested in publications from northern Kambaata (especially Geetaahun 2002 and Brook & Yonathan 2013). Rather, *GID-* '(non-tactile) cold' occurs where we would have expected *SIGG-*. It is to be investigated in the future whether there are local differences in the use and meaning of temperature terms across the Kambaata-speaking area.

In contrast to the equivocally positive *SIGG*- ‘comfortably cold or warm, cool’, the temperature terms that we consider domain-central (§3.1.1) are attested in both positive and negative contexts; see, for instance, that *CAAL*- ‘(tactile) cold’ is used for a positively cold entity in (4) and for a negatively cold entity in (6).

3.1.2.3. Lukewarm

We know of two terms for medium temperature in Kambaata. The lexeme *GUMMUUT*- ‘lukewarm, tepid’ is only used for liquids – as the definition in Alemu’s (2016) dictionary confirms.

- (15) *dun-amaa[n]-ch-ú* *ikk*
pour-PASS-AG-SG-mACC become.3mPCO
caal-í *gardab-íichch hígg* *iib-á*
cold-mGEN level-mABL pass.3mPCO warm-mACC
(Definition of *gummuut-á* ‘lukewarm, tepid’) ‘If it is a liquid (lit. being something that is poured), (it means) warm, having passed the cold level.’
(Alemu 2016: 401; translation, segmentation, glosses and stress marks ours)

Babies can be washed with lukewarm water, *gummuut-a(a) wo’-iin* {lukewarm-mOBL water-mICP}, tea that one has forgotten to drink and beer that has been taken out of the fridge for too long are lukewarm (16)-(17).

- (16) *Shah-i-’i* *ag-ú’нна* *hább* *agúrr-i-yan*
tea-fACC-1sPOSS drink-1sNCO forget.1sPCO leave-1sPCO-DS
gummuut-t *fad-dóo’u*
be(come)_lukewarm-3fPCO do_completely-3fPFV
‘I completely forgot to drink my tea, now it has become lukewarm.’
- (17) *Firiij-íichch* *mát-o* *saat-i* *qunx-íichch* *bir-íta*
fridge-mABL one-mOBL hour-mGEN about-mABL front-fACC
fushsh-inoommí *bíir-u* *tées-u*
take_out-1sPFV.REL beer-mNOM now-mOBL
gummuuchch *fájj-ee’u*
be(come)_lukewarm.3mPCO do_completely-3mPRF
‘The beer that we have taken out of the fridge about an hour ago has now become lukewarm.’

The second lexeme expressing medium temperature, *GIC*- ‘not burning well, lukewarm, not warm not hot’, is primarily used for the fire, but also attested with objects that are placed on the fire, e.g. the griddle (*mixaad-ú* m.) on which bread is baked and grain is roasted. The lexeme *GIC*- implies that the fire or an object was properly burning (hot) before but is now no longer burning (hot) enough; the connotation is always negative. It is difficult to decide whether *GIC*- should be considered a true temperature term or whether it should rather be regarded as a verb expressing a type of burning.⁹ More data is definitely required to answer this question.

⁹ Note that Alemu (2016: 371) defines *gic*- as *giiráta ikk léelan búb*- ‘if it is a fire, (it means) burn slowly’ (English translation and stress marking ours).

3.1.2.4. Extreme cold

The lexeme *QABAD-* ‘(tactile) extremely cold, uncomfortably cold, too cold (e.g. for consumption)’ qualifies the cold of an object as extreme and has a negative connotation. It is used in the context of food that needs to be reheated before consumption (18), feet that are ice-cold because they were not kept under the blanket in the night (19) or hands that are numb because one played with hail.

- (18) *Ku* *wáas-u* *qabájj-ee’u*,
 A_DEM1.mNOM ensete_bread-mNOM be(come)_extremely_cold-3mPRF
quum-u’nnáan *it-is-áno-ba’a*
 steam_on_griddle-3mNCO eat-CAUS1-3mIPV-NEG
 ‘This ensete¹⁰ bread is too cold (to eat), one cannot eat it (lit. it does not make eat) before it is reheated (on the griddle).’

- (19) *Anka’rr-ó* *gid-u* *lokk-á-’i*
 last_night-fGEN cold[non-tactile]-mNOM feet-fACC-1sPOSS
qabad-íshsh *gashsh-ée’u*
 be(come)_extremely_cold-CAUS1.3mPCO pass_the_night.CAUS1-3mPRF
 ‘Last night’s cold made me pass the night with ice-cold feet.’

3.2. Ambient temperature

‘cold’	‘warm’
<i>gid-á(ta)</i> [ADJ] ~ <i>gid-</i> [V]	<i>iib-á(ta)</i> [ADJ] ~ <i>iib-</i> [V]

3.2.1. Domain-central temperature terms

In the frame of ambient evaluation, the lexeme *IIB-* ‘warm’ (20)-(21) is in opposition to *GID-* ‘(non-tactile) cold’ (22)-(24). Kambaata makes a distinction between ‘(tactile) cold’ and ‘(non-tactile = ambient, personal-feeling) cold’ but not between ‘(tactile) warm’ and ‘(non-tactile) warm’. If the ambient temperature term is the predicate, the subject slot can either be empty (21) or be occupied by the noun *ir-á* ‘land’ (20).

- (20) *Kabar-é* *ir-u* *iib-a-a*,
 today-mGEN land-mNOM warm-mPRED-COP2
 ‘It’s warm today.’
- (21) *Arríichch-ut* *ful-táa* *j-áata* *iib-áno*
 sun.SG-fNOM come_out-3fIPV.REL time-fACC be(come)warm-3mIPV
 ‘When the sun comes out, (it) gets warm.’ (Kambaatissata 1989: 2.49)

Alternatively, the subject slot of an ambient temperature expression can be filled with a place name (1)-(2), a common place noun such as *baad-ú* ‘country’ or *min-í* ‘house’ (22), a place nominalisation (23), or a temporal noun such as *sann-á* ‘week’ (24), *max-óo* ‘rainy season’, *hag-úu* ‘dry season’ or the names of the months. Regarding (22), it is important to stress that the use of *CAAL-* ‘(tactile) cold’ is not excluded with *min-í* ‘house’. Note, however, that a house qualified as *GID-* ‘(non-tactile) cold’ has necessarily a cold room temperature, whereas a house described as *CAAL-* ‘(tactile) cold’ would, for instance, have a cold floor.

¹⁰ *Waas-á* (m) ‘Ensete ventricosum’ is a plant cultivated in Kambaata.

- (22) A: *Ku mín-u m-íi*
 A_DEM1.mNOM house-mNOM what-mDAT
gid-áyyoo'u?
 be(come)_cold[non-tactile]-3mPROG
 B: *Án maskoot-á fánn-i-yanee-t*
 1sNOM window-mACC open-1sPCO-DS.VV-COP3
 A: ‘Why is it (so) cold in this house (lit. why is this house (ambient) cold)?’ –
 B: ‘It’s (because) I have opened the window.’
- (23) *Ku át he'-aanti=b-eechch-u*
 A_DEM1.mNOM 2sNOM live-2sIPV.REL=PLACE-SG-mNOM
abb-íshsh-i=ké' gid-áno-a
 be(come)_much-CAUS1-3mPCO=SEQ be(come)cold[non-tactile]-3mIPV.REL-mCOP2
 ‘It is very cold where you live (lit. this place where you live is very cold).’
 (Saint-Exupéry 2018: 32)
- (24) *Sánn-unku-s gid-a-a,*
 week-mNOM<N>-DEF cold[non-tactile]-mPRED-mCOP2
kabáree-t xáll-a-ba'a
 today.mOBL.VV-COP3 only-mOBL-NEG
 ‘The (whole) week was cold, not only today.’

In (25) we see, furthermore, that wind, which is a factor that influences the ambient temperature in a decisive way, is not characterised as *CAAL*- ‘(tactile) cold’ but as *GID*- ‘(non-tactile) cold’. As the temperature term is used as a modifier to *bobir-á* ‘wind’ in (25), the inchoative-stative verb occurs in a relative verb form.

- (25) *Hád-a abb-íshsh gid-áyyoo*
 outside-fOBL be(come)_much-CAUS1.3mPCO be(come)_cold[non-tactile]-3mPROG.REL
bobir-á bobirs-áyyoo'u, min-i-sí áaz-u
 wind-mACC blow.CAUS1-3mPROG house-mGEN-DEF interior-mNOM
ammóo íbb cúlu=ass-áyyoo'u.
 however be(come)_warm.3mPCO nice.IDEO=do-3mPROG
 ‘Outside a very cold wind (lit. a wind which is being (non-tactile) cold) is blowing, but in the house it is nicely warm.’

In the frame of ambient evaluation, Koptjevskaja-Tamm (2015b: 16) makes a distinction between non-referential ambient temperature, in which no reference is made to any participant of the temperature event, and quasi-referential ambient temperature, that makes reference to places and times. In Kambaata the ambient temperature expressions with an empty-subject (21) are non-referential, while the other examples quoted in this section can be categorised as quasi-referential.

3.2.2. Domain-peripheral temperature terms

In the frame of ambient evaluation, it is not common to find examples with lexemes other than *IIB*- ‘warm’ and *GID*- ‘(non-tactile) cold’, which are by far the most central terms. Some alternative expressions are discussed in the following sub-sections.

3.2.2.1. Extreme heat

In statements about extreme heat we find the lexemes that we have already encountered in the tactile frame of evaluation, *faar-á* (m) ‘something boiling’ and *buss-* ‘burn; be dangerously, excessively hot’ (§3.1.2.1) (26).

- (26) A: *Ka’iin* *ír-u* *hattíg-oo-t?*
 P_DEM3.mICP land-mNOM how-mOBL.VV-COP3
Nii=b-eechch-lin *xeen-á* *ub-áyyoo’u*
 1pGEN=PLACE-SG-mICP rain-mACC fall-3mPROG
- B: *Kám* *kú=b-u*
 INTJ A_DEM1.mNOM=PLACE-mNOM
fáar-a-a, *arríichch-u* *m-íi*
 boiling_thing-mPRED-mCOP2 sunlight.SG-mNOM what-mGEN
qax-á-ndo *buss-áyyoo’u*
 extent-mACC-DISJ burn-3mPROG

(Context: A and B on the talking over the phone:) A: ‘How is the weather (lit. land) on the other (side)? In our area it is raining (lit. (it) is falling rain).’ – B: ‘Here it’s boiling (lit. this place is something boiling), the sun burns incredibly (lit. to what extent).’

We are hesitant to interpret *buss-* in (26) as expressing ambient temperature, it rather seems that *buss-* is here used in its source meaning ‘burn (tr.)’, with the subject *arríichch-u* (mNOM) ‘sunlight, sunrays’ as the agent. Whereas the domain-central ambient temperature terms (§3.2.1) can all take the non-referential *ír-u* (mNOM) ‘land’ as subject (20), **ír-u buss-áyyoo’u* {land-mNOM burn.CAUS1-3mPROG}, intended meaning: ‘it is very hot’, is unacceptable. In contrast, the verb *faar-* ‘boil (intr.); be boiling hot’ and the noun *faar-á* ‘something boiling’ are attested with a non-referential subject *ír-u* (mNOM) ‘land’ (27).

- (27) *Kabár* *ír-u* *fáarr-ee’u* ~ *fáar-a-a*
 today.mOBL land-mNOM boil-3mPRF boiling_thing-mPRED-mCOP2
 ‘Today it is extremely hot.’ (First variant volunteered by native speaker consultant in 2002)

3.2.2.2. Comfortably cold or warm

As in the tactile frame of evaluation (§3.1.2.2), *sigg-* ‘comfortably cold or warm, cool’ can be used for a pleasant, not too warm (or no longer too warm) ambient temperature (28)-(29). In (28), the temperature term is used as the predicate, in (29) as a case and gender-agreeing modifier.

- (28) *Kabár* *ír-u-s* *sígg-a-a,* *ber-é*
 today.mOBL land-mNOM-DEF cool-mPRED-mCOP2 yesterday-mACC
abb-íshsh *iib-áyyoo-haa* *íkke*
 be(come)_much-CAUS1.3mPCO be(come)_warm-3mPROG.REL-mCOP2 PST
 ‘Today the weather is pleasant, (while) it was very warm yesterday.’ (Intended translation: ‘It is warm today, while yesterday was very hot.’)

- (29) *Lal-i az-úta afiushsh-eennó=b-u*
 cows-mGEN milk-fACC put-3honIPV.REL=PLACE-mNOM
sigg-á=bb-a ikk-ó=da xúm-a-a
 cool-mACC=PLACE-mACC become-3mPFV.REL=COND good-mPRED-mCOP2
 ‘It is good if the place where the cow milk is stored is a cool place.’
 (Kambaatissata 1989: 4.25)

3.2.2.3. Extreme cold

For the expression of extreme cold ambient temperatures, Kambaata does not seem to make use of the tactile lexeme *QABAD-* (§3.1.2.4);¹¹ the utterance **ír-u qabájj-ee’u* {land-mNOM be_extremely_cold-3mPRF}, intended meaning: ‘it is extremely cold’ is unacceptable. Instead extreme cold can be expressed with the help of the noun *quxal-íta* (f) ‘bitter, freezing (ambient) cold, frost’ (30) or the corresponding verb *quxal-* ‘be(come) bitterly, freezing (ambient) cold, frosty’,¹² e.g. *ír-u quxállee’u* ‘it (lit. the land) is bitterly cold’.

- (30) *Ir-áan híil-at quxál-it úbb-ee’u*
 land-mLOC bad-fNOM bitter_cold-fNOM fall-3mPRF
ka sann-á
 A_DEM1.mACC season-mACC
 ‘This season is bitterly cold (lit. bad bitter cold has fallen on the land this season)’

Alternatively, extreme cold weather is “nose-cutting” (31).

- (31) *Ku ír-u san-úta mur-áyyoo’u*
 A_DEM1.mNOM land-mNOM nose-fACC cut-3mPROG
 ‘It is bitterly cold (lit. This land is cutting the nose).’ (Volunteered by a native speaker in 2007)

Weather terms may conflate temperature and humidity, e.g. *ciimool-* ‘be(come) (ambient) cold and rainy (and muddy)’.

3.3. Personal-feeling temperature

Under personal-feeling temperature we subsume expressions of thermal comfort (‘I feel warm’, ‘I freeze’) (§3.3.1) and expressions of evaluation of the temperature of one’s own body parts (‘my nose is cold’, ‘my feet are warm’) (§3.3.2). In expressions of personal-feeling temperature, the persons (or animate beings) experiencing a particular sensation are encoded overtly. As indicated in Table 6, the experiencer occurs either as the object of a temperature verb or as the possessor of a subject that refers to a particular body part. Expressions of thermal comfort (type I) are modelled on – but are not identical to – ambient temperature expressions (lit. ‘it colds me’), whereas body part temperature is expressed by the tactile temperature construction (lit. ‘my feet are cold’). An alternative way to express thermal comfort (marked in grey in Table 6 and discussed in §3.3.3) combines features of the personal-feeling

¹¹ Note, however, that Alemu (2016: 788) lists the idiom *qabad-á max-óo* {extremely_cold-mACC rainy_season-mACC}. He defines the entry as *abbishsh gidanó sanná* ‘season which is very (non-tactile) cold’ (English translation and stress marking ours).

¹² Alemu (2016: 865) also lists an adjective *quxal-aam-ú* (m) (feminine: *quxal-aam-íta*) ‘bitterly cold’, which is derived from the noun through the proprietive *-aam-* derivation (see Table 3 in §2).

construction I and the tactile construction, takes ‘body’ as the subject, the experiencer as possessor of the subject, and the lexeme for ‘(non-tactile) cold’, *GID-*, as predicate.

Frame of evaluation	Subject	Predicate	Lexical opposition ‘warm’ vs. ‘cold’	Examples
Ambient temperature (§3.2)	∅ ~ place/time	temperature V/Adj	<i>IIB-</i> vs. <i>GID-</i>	(20)-(25)
Personal-feeling temperature I: Thermal comfort (§3.3.1)	∅	temperature V-O _[Experiencer]	<i>iibb-is-</i> vs. <i>gid-</i>	(32)-(37)
Personal-feeling temperature II: Thermal comfort (§3.3.3)	body-POSS _[Experiencer]	temperature V/Adj	<i>IIB-</i> vs. <i>GID-</i>	(42)-(39)
Personal-feeling temperature III: Body parts (§3.3.2)	body part-POSS _[Experiencer]	temperature V/Adj	<i>IIB-</i> vs. <i>CAAL-</i>	(40)-(41)
Tactile temperature: Things (§3.1)	thing	temperature V/Adj	<i>IIB-</i> vs. <i>CAAL-</i>	(6)-(7)

Table 6. Personal-feeling temperature constructions compared
(∅ = empty non-referential subject)

The constructional variation found in the domain of personal-feeling temperature could be conceptually and perceptually motivated. Personal-feeling temperature can either be conceptualised as an inner bodily experience or as an external experience made via one’s skin, i.e. a tactile experience of one’s own body. Whereas construction type I is restricted to the expression of one’s own inner temperature, construction II and III can be used either for the inner evaluation of the one’s own body (part) temperature or for the tactile evaluation of somebody’s body (part) temperature by another individual.

3.3.1. Personal-feeling temperature I: Thermal comfort

‘cold’	‘warm’
<i>gid-</i> [V] + DO _{Experiencer}	<i>iibb-is-</i> [V-CAUS1] + DO _{Experiencer}

For the expression of thermal comfort (construction type I) Kambaata makes use of the same lexical material as in the expression of ambient temperature. However, we observe morphological and syntactic differences between the two frames of evaluation. For the expression of ambient temperature, the temperature lexemes can be used in their adjectival or in their derived verbal form – recall (20) and (21). For the expression of thermal comfort, only temperature verbs are permitted. In the warm domain, the experiencer is expressed as the direct object of the causativised (!) temperature verb, *iibb-is-* ‘warm (something)’,¹³ either by a pronominal suffix on the verb, see *-’e* 1sO in (33), or by both a pronominal suffix and an accusative (pro)noun phrase; see *ées* and *-’e* in (32).¹⁴ The hypothetical form **iib-áyyoomm* {be(come)_warm-1sPROG}, intended meaning: ‘I feel warm’, is ungrammatical.

¹³ The verb *iibb-is-* ‘warm (something)’ is the simple causative 1 form of *iib-* ‘be(come) warm’ (§3.1.1, §3.2.1).

¹⁴ The unextended verb *iib-* cannot be used to express personal-feeling temperature. A verb form such as *iib-áyyoo-’e* {be(come)_warm-3mPROG-1sO} can only be interpreted as expressing tactile temperature, with the object pronoun referring to a dative beneficiary, i.e. ‘(something masculine) is becoming warm for my benefit’.

- (32) *Ées kabár iibb-is-áyyoo-'e*
 1sACC today.mOBL be(come)_warm-CAUS1-3mPROG-1sO
 'I feel hot today (lit. (it) is warming me today).'
- (33) *Dagujj-oommí án dagud-án wáall-eemmi=tannée*
 run-1sPFV.REL 1sNOM run-1sICO come-1sPRF.REL=BEC1
m-íi qax-á-ndo iibb-ishsh-o-'e
 what-mGEN extent-mACC-Q be(come)_warm-CAUS1-3mPFV-1sO
 (Context: A asks B why he is sweating so much. B answers:) 'I have come running (nonstop), that's why I feel very hot (lit. because a running me came running, to what extent did (it) warm me).'

The subject slot remains empty, when atmospheric conditions or physical exercises are the reasons for the experiencer's high body temperature (32)-(33). The subject slot can, however, be filled if clothing keeps the experiencer warm (34).

- (34) *Ku jaakkéett-u iibb-is-áyyoo-'e,*
 A_DEM1.mNOM jacket-mNOM be(come)_warm-CAUS1-3mPROG-1sO
fushsh-áamm
 take_off-1sIPV
 'This jacket is warm (lit. it warms me), I will take it off.'

In the cold domain, the experiencer of personal-feeling temperature is expressed as the direct object of the underived temperature verb *gid-* 'be(come) (non-tactile) cold', again, either only encoded by an object suffix on the verb (35) or by an object suffix and a full object (pro)noun phrase simultaneously (36). It is noteworthy that the verb *gid-* is here not extended by a causative morpheme;¹⁵ *gid-* thus represents the only true labile (intransitive-transitive) verb that we have come across in the language. In (35)-(36), *gid-* is used as the main verb, in (37) as a subordinate verb, more precisely as a different subject converb.

- (35) *Áaz-u-'i fayy-á ih-ú*
 interior-mNOM-1sPOSS healthy-fACC become-mACC
hoogg-ó=tannée
 not_do-3mPFV.REL=REAS1
kánn arriichch-ooní-i gid-áyyoo-'e
 A_DEM1.mOBL sun.SG-fLOC-ADD be(come)_cold[non-tactile]-3mPROG-1sO
 'As I am not feeling well (lit. my interior is not healthy), I even feel cold in the sun (lit. it even "colds" me in the sun).'
- (36) *Má'nn-inti-s abb-ís-s*
 place-fNOM<N>-DEF be(come)_much-CAUS1-3fPCO
gid-dáa-taa,
 be(come)_cold[non-tactile]-3fIPV.REL-fCOP2
eesí-i gíjj-o-'e
 1sACC-ADD be(come)_cold[non-tactile]-3mPFV-1sO
 'The place is very cold and I am cold (lit. (it)¹⁶ "colded" me), too).'

¹⁵ The causative verb *gid-is-* lit. 'make (non-tactile) cold' is never used in temperature expressions. The verb does exist, though; it is found in blessings to the family of a deceased (§5.2.6).

¹⁶ The feminine noun *má'nn-inti-s* 'the place' is not the subject of the final masculine temperature verb.

- (37) *Mán-ch-u gid-áan uurr-í-yan*
 man-SG-mNOM cold[non-tactile]-mLOC stand-3mPCO-DS
gíjj-i-yan-s hux-áyyoo 'u
 be(come)_cold[non-tactile]-3mPCO-DS-3mO shiver-3mPROG
 (Description of a picture in a schoolbook:) ‘A man is standing in the cold, he is freezing (lit. (it) has “colded” him) and he is shivering.’ (Sayinsa 1995: 1.5)

If the experiencer freezes terribly, the cold is said to kill him/her (38).

- (38) *Gíd-u sh-áyyoo-kkee- 'nnu? Giir-á=b-a*
 cold[non-tactile]-mNOM kill-3mPROG-2sO.VV-PRAG3 fire-fGEN=PLACE-mACC
hínc=y-ít guba 'áanti-ba-ndo?
 close.IDEO=say-2fPCO warm_oneself_up-2sIPV-NEG-Q
 ‘You are freezing terribly (lit. cold is killing you), aren’t you? Don’t you (want to) move closer to the fire to warm yourself up?’

Alternatively, the sensation of extreme bodily cold can be expressed with the lexeme *CAAL-* for ‘(tactile) cold’, which we otherwise find only in the tactile frame of evaluation (39). The use of *CAAL-* turns the statement in (39) into a hyperbole; replacing *cáall-eemmi-a ikke* ‘I felt terribly cold’ by the expected *gíjj-ee- 'e-a ikke* {be(come)_cold[non-tactile]-3mPRF-1sO.REL-mCOP2 PST} lit. ‘it “colded” me’ would attenuate the statement.

- (39) *Ka jaakkeet-á odd-aqq-eemmiichch*
 A_DEM1.mACC jacket-mACC wear-MID-1sPFV.ABL
téma ál-u- 'i iib-áyyoo 'u.
 now body-mNOM-1sPOSS be(come)_warm-3mPROG
Wóna- 'nnu cáall-eemmi-a ikke
 first.OBL-PRAG3 be(come)_cold[tactile]-1sPRF.REL-mCOP2 PST
 ‘Now that I have put on this jacket, my body is warming up. I felt terribly cold before.’

For constructions expressing extreme bodily heat see §3.3.3.

3.3.2. Personal-feeling temperature III: Body parts

S _{body part}	‘cold’	‘warm’
	<i>caal-á(ta)</i> [ADJ] ~ <i>caal-</i> [V]	<i>iib-á(ta)</i> [ADJ] ~ <i>iib-</i> [V]

For the expression of the temperature of one’s own body parts, Kambaata uses a construction that is formally identical to the tactile temperature construction (§3.1). This formal resemblance has consequences for the lexeme choice in the cold domain: *CAAL-* ‘(tactile) cold’, rather than the *GID-* ‘(non-tactile) cold’, is used to qualify cold body parts (40)-(41). The body part occurs as the subject of a temperature predicate (adjective or verb), the experiencer is encoded as the possessor of the subject.

- (40) *Lókk-a- 'i cáal-tée'u (*gíd-dee'u)*
 foot-fNOM-1sPOSS be(come)_cold[tactile]-3fPRF
 ‘I have cold feet (lit. my feet are cold).’

- (41) *Xon-éechchi-n áff hikkánn kin-óon*
 before-mABL-N take.1sPCO A_DEM2.mOBL stone-mLOC
afuu'll-i-yan fagáar-u-'i cáall-ee'u
 sit-1sPCO-DS buttocks-mNOM-1sPOSS be(come)_cold[tactile]-3mPRF
 'I have been sitting on this stone for a while and now I have a cold bottom.'

In case of extreme coldness, body parts can also be said characterised with *badar-* 'be(come) numb (of cold) (e.g. because of cold weather or because of having touched something cold)'.

3.3.3. Personal-feeling temperature II: Thermal comfort

S _{body}	'cold'	'warm'
	<i>gid-</i> [V]	<i>iib-</i> [V] ¹⁷

The construction for body part temperature described in §3.3.2 can also be applied to express thermal comfort, in which case the body as a whole occurs is the subject (42), again with the experiencer as the possessor.

- (42) (...) *ál-u-se iibb-ó saat-ahá-a*
 body-mNOM-3fPOSS be(come)_warm-3mPFV.REL time-mACC-ADD
tees-ó hamiil-agud-á agud-dáa'u
 now-fGEN cabbage-SIM-mACC resemble-3fIPV
 (Speaking about a chameleon (f):) '(...) and when her body is warm (i.e. when she feels warm), she looks cabbage-coloured.' (TD2016-02-11_001)

However, unlike in the expression of body part temperature (40)-(41), speakers rather use *GID-* '(non-tactile) cold' than *CAAL-* '(tactile) cold' if 'body' is the subject in contexts such as (43). Thus this personal-feeling construction II shares syntactic features with the body part temperature construction (= personal-feeling construction III) but lexical features with personal-feeling construction I (recall Table 6).

- (43) *ál-u-se gijj-ó (??)caall-ó*
 body-mNOM-3fPOSS be(come)_(tactile)cold-3mPFV.REL
saat-ahá-a
 time-mACC-ADD
 (Example elicited on the basis of (42):) '(...) and when her body is cold (i.e. when she feels cold)'

Temperature expressions that include 'body' are also common when speaking about fever. Two possible expressions are given in (44) and (45). See also (13) above. The temperature noun *iib-á* 'warmth' (45) also means 'fever'. (Temperature nouns are discussed in more detail in §4.1.1).

- (44) *Ka ciil-i ál-u iib-áyyoo'u /*
 A_DEM1.mOBL child-mGEN body-mNOM be(come)_warm-3mPROG
buss-áyyoo'u / faar-áyyoo'u
 burn-3mPROG boil-3mPROG
 'This child has a fever / has high fever (lit. this child's body is burning) / has extremely high fever (lit. this child's body is boiling).'

¹⁷ So far we only have examples in which 'body' occurs with a verbal temperature predicate.

- (45) *Al-éen-ta-s* *hiil-u* *iib-u* *yóo-ba'a*.
 body-mLOC-L-3mPOSS bad-mNOM warmth-mNOM COP1-NEG
 ‘He has no fever (lit. on his body there is no bad/dangerous heat).’

3.3.4. Miscellaneous

Kambaata has a dedicated interjection, *hatatá*, used when a person freezes terribly (46) (see also Alemu 2016: 454).¹⁸ There is no corresponding interjection when a person feels terribly hot.

- (46) *Haml-áan* *hatatá* *y-ee'ii*
 July-mLOC brrr_IDEO say-3mPFV.REL.NMZ1a.mNOM
haag-úun *haat-úta* *qulx-áno*
 dry_season-mLOC roasted_grain-fACC long_for-3mIPV
 ‘The one who said “Brrr” in July (= coldest month) longs for roasted grain in the dry season.’ (Alamu & Alamaayyo 2017: 70)

4. The grammar of temperature expressions

Information on the grammar of temperature expressions has already been presented in the previous (sub-)sections. Thus §4 serves to assemble information on the morphology of temperature terms and the (morpho-)syntax of the different constructions to allow for a better comparison across the semantic frames of evaluation.

4.1. Morphology of temperature terms

4.1.1. Temperature nouns

The adjectival temperature terms discussed in the previous sections have corresponding temperature nouns (Table 7), which call in two groups: (i) temperature nouns which are based on the same stem as the corresponding adjectives and only differing from them with respect to their inflectional morphology – see ‘warm’ and ‘(non-tactile) cold’, and (ii) temperature nouns that are derived from temperature adjectives by the productive quality noun derivation *-im*. The derived quality nouns end in *-áta* (declension F1a) in their citation form (Treis 2008: 154f).

Adjective	Translation	Noun	Translation	Ex.
<i>iib-á(ta)</i>	‘warm’	<i>iib-á</i>	‘warmth; fever’	(48)
<i>gid-á(ta)</i>	‘[non-tactile] cold’	<i>gid-á</i>	‘[non-tactile] cold’	(38)
<i>caal-á(ta)</i>	‘[tactile] cold’	<i>caal-im-áta</i>	‘[tactile] cold’	(47)
<i>sigg-á(ta)</i>	‘comfortably cold or warm, cool’	<i>sigg-im-áta</i>	‘comfortably cold or warm temperature, coolness’	
<i>gummuut-á(ta)</i>	‘[tactile, of liquids] lukewarm’	<i>gummuut-im-áta</i>	‘[tactile, of liquids] lukewarmth’	(47)
<i>gic-á(ta)</i>	‘[tactile, of fire] lukewarm’	<i>gic-im-áta</i>	[tactile, of fire] ‘lukewarmth’	
<i>qabad-á(ta)</i>	‘[tactile] extremely cold’	<i>qabad-im-áta</i>	‘[tactile] extreme cold’	

Table 7. Temperature adjectives and their corresponding nouns

¹⁸ In Plazikowsky-Brauner’s (1964) Hadiyya wordlist, there is an entry *hadid! hadid!*, translated in German as ‘kalt! kalt!’ (= ‘cold! cold!’). The exclamation mark possibly indicates that we are here also dealing with an interjection.

The use of three temperature nouns is exemplified in (38), (47) and (48).

- (47) *Ka ciil-á aansh-itú' nna m-ii-ma*
 A_DEM1.mACC infant-mACC wash.CAUS1-2fNCO what-mDAT-PRAG4
dás-si-la ? Wó'u gummuut-im-áachch
 be_late-2fPCO-PRAG2 water-mNOM lukewarm-QU-fABL
caal-im-á=b-a door-ámm
 cold[tactile]-QU-fGEN=PLACE-mABL change-PASS.3mPCO
fajj-óo-'nnu?
 leave-3mPFV.VV-PRAG3
 'Why did it take you so long before you (were ready to) wash the child?! The water has (now) turned from being lukewarm to being (tactile) cold, hasn't it?'
- (48) *Iitt-itúmb-u-a iib-ahá-a arriichch-uhá-a*
 love-2sNREL-mPRED-mCOP2 warmth-mACC-ADD sunlight.SG-mACC-ADD
 (Verse from a poem:) 'You (m) (= the enset plant) are someone who doesn't like the heat and the sun (i.e. the enset is a plant of the highlands).' (Geetaahun 2002: 216)

4.1.2. Derived temperature verbs

In the same way as all other inchoative-stative verbs of the language, temperature verbs can be extended by the simple causative derivation *-(i)s* (CAUS1). The resulting forms display some phonological and semantic irregularities, as is common of the causative derivation process in the language in general. In (49), the derived form of *caal-* 'be(come) (tactile) cold', *caal-s-* 'make (tactile) cold', is used.

- (49) *Ku ciil-u shah-éen wo'-á wórr*
 A_DEM1.mNOM infant-mNOM tea-fLOC water-mACC put_in.3mPCO
caal-s-í kámm-o
 be(come)_cold[tactile]-CAUS1-3mPCO do_completely-3mPFV
 'The child poured water into the tea and cooled it.'

Regarding the causative form of *iib-* 'be(come) warm', *iibb-is-* 'warm (something)', it is worth noting that the root-final consonant of the derived form is geminate (*bb*).¹⁹ The causative form of *sigg-* 'be(come) comfortably cold or warm, cool', *sigg-is-* 'cool (something)', is commonly used in figurative contexts ('calm (something) down; quench', cf. §§5.2.4-5), and *gid-is-* lit. 'make (non-tactile) cold' is exclusively used figuratively ('console, heal', cf. §5.2.6). Causativised temperature verbs also allow for a middle extension, marked by *-'* / *-aqq* and having a reflexive or benefactive reading; see, e.g., *iibb-is-* CAUS1 'warm (something)' > *iibb-icc-* CAUS1.MID (i) 'warm oneself' (51), (ii) 'warm (something) for oneself' (50). Note that *-is* CAUS1 + *-'* MID results in *-icc*, according to a regular morphophonological rule.

¹⁹ Seen from a historical perspective, the underived form has actually degeminated *bb* to *b* (§6).

- (50) *Hitt giir-a-s ful-táa lám-it*
 A_DEM2.fNOM fire-fNOM-DEF go_out-3fIPV.REL two-fNOM
dúun-n-at (...) qurs-á-s
 mountain-PL1-fNOM breakfast-mACC-3mPOSS
iibb-icc-ii abb-ís-s
 be(come)_warm-CAUS1.MID-mDAT be(come)_much-CAUS1-3fPCO
kaa'll-itáa-si-ta ikke
 help-3fIPV-3mO.REL-fCOP2 PST
 ‘These two volcanoes (lit. mountains from which the fire goes out) were
 useful for him to heat his breakfast.’ (Saint-Exupéry 2018: 34)
- (51) *Pheextróos-i-n isso'óoni-n barg-ámm uurr-í*
 PN-mNOM-N 3pICP-N add-PASS.3mPCO stand-3mPCO
iibb-icc-áyyoo ikke
 be(come)_warm-CAUS1.MID-3mPROG PST
 ‘And Peter stood with them and warmed himself (by the fire).’ (John 18, 18)

4.2. Morphosyntax of temperature expressions

As seen in numerous examples, temperature adjectives are used as NP modifiers (3), as heads of NPs (4) and non-verbal predicates (1); their corresponding inchoative-stative verbs can be used in the same three syntactic functions, as predicates (22), as NP modifiers when relativised (25) and as NP heads when nominalised (11).

The Kambaata temperature constructions fall into different types in Pustet’s (2015) morpho-syntactic typology of temperature predications. The tactile temperature construction is a simple intransitive construction, in which the entity whose temperature is evaluated (stimulus) occurs as the subject of an adjectival or verbal predicate; the predicate reflects the person and gender of the stimulus; compare, e.g., (16) and (17). For the expression of ambient temperature, Kambaata also only applies an intransitive strategy (Pustet 2015: 904ff), which comes, however, in three sub-types. In the first sub-type, the subject slot is empty and the temperature predicate carries a default 3m index (21); in the second sub-type, the subject slot is filled by the non-referential noun *ir-á* (m) ‘place’ (20), which also triggers (third person) masculine agreement on the predicate. In the third sub-type, the subject is a referential noun of place or time, with which the predicate agrees in person and gender; compare, e.g., (22) and (36) with a masculine and feminine place noun, respectively.

The situation is most complex in the frame of personal-feeling temperature. Here we can distinguish four constructions. (A) In a pseudo-transitive construction the individual that experiences temperature within his/her own body is expressed as the accusative object of a temperature verb. The subject slot remains empty. The temperature verb is by default indexed for 3m but the person marker does not have an extra-linguistic referent. The construction is literally translatable as ‘(it) “colds” / warms the experiencer’, cf. (32), (33), (35)–(37), and corresponds to Pustet’s Non-referential subject Strategy (2015: 893–896; see especially p. 894 in which languages such as German, Imbabura Quechua and Huanca express the experiencer as an accusative object). The pseudo-transitive construction of personal-feeling temperature is a coding format that is uncommon elsewhere in the language. (B) Kambaata sometimes resorts to a truly transitive construction for the expression of extreme personal-feeling temperature. Here a temperature noun functions as subject and the

experiencer has accusative object, i.e. ‘cold kills the experiencer’ (38) (Pustet 2015: Experiencer as Transitive Object Strategy). (C) The third personal-feeling construction is an intransitive construction in which a body part or the body is the subject of a temperature verb, with the experiencer encoded as the possessor of the subject, i.e. ‘experiencer’s body part is cold/warm’ (40)-(43) (Pustet 2015: Intransitive Subject Strategy). (D) Finally, in a second type of intransitive construction, which is marginally used for extreme cold personal-feeling temperature, the experiencer is expressed as the subject of a temperature verb, i.e. ‘experiencer “colds”’ (39) (Pustet 2015: Intransitive Subject Strategy).

5. Metaphorical extensions

Many temperature terms are not exclusively used to express temperature but their meaning has been extended to other semantic domains. From the literature (Koptjevskaja-Tamm 2014b: 30-33) we know that temperature terms are frequently used to characterise other sensations (taste, vision) as well as emotions and intellectual capabilities. We demonstrate in this section that Kambaata connects warmth and heat to freshness, spiciness, thirst, busyness/activity and excessive anger, while cold is associated with inactivity, dullness, shock, the absence of thirst, consolation/the absence of pain. Coolness stands furthermore for calmness. Semantic extensions could not be found for all temperature terms; we are, for instance, not aware of extended uses of *GUMMUUT*- ‘(tactile) lukewarm (of liquids)’ and *QUXAL*- ‘(ambient) bitterly cold’.

To the best of our knowledge, Kambaata does not share the following other cross-linguistically common semantic extensions of temperature terms: the use of temperature terms in the domain of vision (e.g. *cold colours*), sex (e.g. *hot* for ‘sexually aroused’) and affection (e.g. *warm words*, *warm-hearted*). The latter observation is especially noteworthy, as the metaphor AFFECTION IS WARMTH is assumed to be universal (Lakoff & Johnson 1999: 50, quoted after Koptjevskaja-Tamm 2015b: 3).

5.1. Extensions of WARM and (BURNING) HOT

The semantic extensions of *iib*- ‘warm’ and *buss*- ‘burn’ can be represented by the following five conceptual metaphors.

- FRESHNESS IS WARMTH
- SPICINESS IS BURNING HEAT
- EXCESSIVE THIRST IS BURNING HEAT
- INCREASED ACTIVITY IS WARMTH
- EXCESSIVE ANGER IS WARMTH / BURNING HEAT

5.1.1. FRESHNESS IS WARMTH

The term *iib*- ‘warm’ is used to qualify certain food types as ‘fresh, recently produced’. Kambaata differentiates three types of milk: *iib-áta* (f) ‘unprocessed, fresh milk’ – *gimm-áta* (f) ‘churned milk’ – *ge’in-ú* (m) ‘sour milk, yoghurt’. Irrespective of its objective temperature, unprocessed and unfermented fresh milk is called *iib-áta* ‘warm (one)’ (52). The term *iib*- ‘warm’ can also be applied to bread even if it is has left the oven for long and is no longer warm as regards its temperature (53).

- (52) *Xaqq-úmb-u* *iib-áta* *qulx-áno-ba'a*
 breed-3mNREL-mNOM warm-fACC desire-3mIPV-NEG
 (Proverb) 'Someone who doesn't breed (cattle) (should not) desire fresh milk.'
 (Geetaahun 2002: 114)
- (53) A: *Dáabb-ut* *eger-táa-taa-ndo?* B: *íib-a-ta*
 bread-fNOM stay-3fIPV.REL-fCOP2-Q warm-fPRED-fCOP2
 A: 'Has the bread been lying around for a while?' – B: '(No,) it is fresh.'

All food types that are qualified as fresh by *iib-á(ta)* have been warm when they came into existence. The term *iib-* is not applied, for instance, to qualify the freshness of fruits. The motivation for the extension of *iib-* is thus still transparent.

5.1.2. SPICINESS IS BURNING HEAT

As many languages of the world, Kambaata describes the sensation triggered by pepper as burning heat (54).

- (54) *Ku* *babbár-u* *buss-áno-a*
 A_DEM1.mNOM pepper-mNOM burn.CAUS1-3mIPV.REL-mCOP2
 'This pepper is hot (lit. is one that makes burn).'

5.1.3. EXCESSIVE THIRST IS BURNING HEAT

Kambaata also conceptualises excessive thirst as burning heat (55) (cf. (69)).

- (55) *Háy* *búbb-eemm*, *wo'-á* *áass-e-'e*
 please burn-1sPRF water-mACC give-2sIMP-1sO
 'Please, I am parched (lit. I'm burning), give me (some) water!'

5.1.4. (INCREASED) ACTIVITY IS WARMTH

Busyness, bustling activity and vivacity is associated with warmth. One can commonly overhear Kambaata speakers qualify a bustling market as warm (56) (compare with (65)). A closely related cognitive metaphor can also be assumed to be reflected in (57) and (58), in which electrifying music that carries people away and captivating, trending news (cf. English *hot topic*) are 'warm'.²⁰

- (56) A: *Kabar-é* *antabee'-i* *díkk-ut* *íib-bee'u*
 today-mGEN chicken-mGEN market-fNOM be(come)_warm-3fPRF
 B: *Áchche* *ayyáan-u* *ga'-áa* *hamús-i-a*
 DM holiday-mNOM tomorrow-fGEN Thursday-mGEN-mCOP2
bár-(i)-bala!
 day-mPRED-PRAG2
 A: 'Today's chicken market is bustling/crowded (lit. warm).' – B: 'The holiday is next Thursday (as you are supposed to know)!'
- (57) *Shál-at* *íib-bóo=da* *dín-u* *korj-áno*
 music-fNOM warm-3fPFV.REL=COND lame-mNOM jump-3mIPV
 (Proverb) 'When the music is electrifying (lit. has become warm), (even) a lame (person) dances (lit. jumps).' (Alamu & Alamaayyo 2017: 143)

²⁰ Examples in Tadesse (2015: 234, 237, 250) show that the lexeme *iibb-* 'be(come) warm, hot' in the neighbouring language Hadiyya is also used with the meaning 'get enlivened, animated'.

- (58) *Hikku* *haasáaww-u* *ka* *sann-á*
 A_DEM2.mNOM talk-mNOM A_DEM1.mACC week-mACC
iibb-ee'u
 be(come)_warm-3mPRF

‘That news has been trending (lit. has become warm) this week.’

The increased activity expressed as warmth can be considered positive or negative. However, in the collocation “warm talk”, the temperature term has a negative connotation. In contrast to *warm words* in English, Kambaata *iibb-* ‘warm’ cannot be linked to affection but rather means ‘animating but without consequences, meaningless, void’ (59). Consequently, people that overstate and exaggerate are advised as in (60).

- (59) *Ís* *iibb-íshsh* *haasáaww-u-a* *bagáan*
 3mNOM be(come)_warm-CAUS1.3mPCO talk-mPRED-mCOP2 CNTR
huj-é *al-éen* *yóo-ba'i-a*
 work-fGEN top-mLOC COP1.3-NEG.REL-mCOP2

‘He is (only good at) animating talk but he doesn’t work (lit. He warms up (and) talks but he is not on top of work).’

- (60) *Kám* *iibb-ís-soot*
 INTJ be(come)_warm-CAUS1-2sNEG.IMP
 ‘Come on, don’t get carried away (lit. don’t warm (it) up)!’

5.1.5. EXCESSIVE ANGER IS WARMTH / BURNING HEAT

Warmth and burning heat are commonly linked to excessive anger in accordance with the allegedly universal metaphor ANGER IS HEAT (Kövecses 1995, quoted after Koptjevskaja-Tamm 2015b: 31). A person who gets angry quickly is said to be ‘nose-warm’ (61).²¹

- (61) *Ís* *san-úta* *iib-a-a*
 3mNOM nose-fACC warm-mPRED-mCOP2
 ‘He is short-tempered (lit. nose-warm, warm with respect to the nose).’

Furthermore, words or actions that arouse the anger of a person are said to burn him/her, in which case the causative form of *bub-* ‘burn (vi)’ > CAUS1 *buss-* ‘burn (vt)’ is used; the experiencer is expressed as the direct object.

- (62) *Ís* *esáan* *ber-é* *daqq-ámm-i=ké'i*
 3mNOM 1sICP yesterday-mACC find.MID-PASS-3mPCO=SEQ
buss-ee-’é *qáx-u!*
 burn-3mPRF-1sO.REL extent-mNOM

(Exclamation) ‘He made me incredibly angry when we met yesterday (lit. the extent to which it burnt me when he met with me yesterday)!’

The noun *bub-áta* (f) ‘blaze’, which is based on the same stem as the verb *bub-* ‘burn; be excessively hot’, is commonly used with the extended meaning ‘rage, excessive

²¹ This idiomatic expression is also attested in two proverbs of local Kambaata publications, in Geetaahun (2002: 102) and in Alamu & Alamaayyo (2017: 141).

anger' (Alemu 2016: 157). Revenge for an act that made a person rage is expressed with the idiom 'exit, go out to one's rage' (63).²²

- (63) *Ber-é* *boroora-too- 'é* *good-á*
 yesterday-mACC insult-3fPFV-1sO.REL share-mACC
kabár *márr-i=ké'i* *bub-á-'i* *full-óomm*
 today.mOBL go-1sPCO=SEQ anger-fACC-1sPOSS come_out-1sPFV
 'Today I went and made her pay / took revenge for her yesterday's insults (lit. I came out/exited to my anger).'

5.2. Extensions of COLD, COOL and ICE-COLD

The semantic extensions of the lexemes *CAAL*- '(tactile) cold', *GID*- '(ambient) cold', *SIGG*- 'comfortably cold or warm, cool' and *QABAD*- '(tactile) extremely cold' are treated together in this section because the conceptual metaphors overlap to a certain extent, as seen in the list below. It is, however, to be noted that the metaphorical extensions of *SIGG*- 'comfortably cold or warm, cool', in the same way as its basic meaning, always have a positive connotation.

- INACTIVITY IS COLD
- DULLNESS IS EXTREME COLD
- SHOCK IS COLD
- CONSOLATION / ABSENCE OF PAIN IS COLD / COOLNESS
- ABSENCE OF THIRST IS COOLNESS
- CALMNESS IS COOLNESS / COLD

5.2.1. INACTIVITY IS COLD

Whereas busyness and excessive, void talking are conceptualised as warmth (§5.1.4), a sleepy, secluded place where not much is happening (64), a little frequented, unusually quiet market on which prices have fallen (65),²³ and a person who is not communicative and not very social are qualified as '(tactile) cold' (66). A comparison of (64) and (2) reveals an important semantic difference: If a place is qualified as *GID*- '(non-tactile) cold' its atmospheric temperature is low (compared to an implicit standard). However, if a place is said to be *CAAL*- '(tactile) cold' then only a figurative interpretation, 'sleepy, secluded', is possible. Example (65)²⁴ is antonymous to (56), where a warm market is a busy market. Another important observation can be made when (70) and (66) are compared: A person qualified as 'cool' has a positive character (70), while qualifying a person as 'cold' is clearly negative (66).

- (64) *Hangacc-u* *cáal-a-a*
 PN-mNOM cold[tactile]-mPRED-mCOP2
 'Hangacca (= town in the northern part of Kambaata) is (a) sleepy (place) (lit. cold).'

²² A similar example is attested in Kambaatissata (1989: 4.78).

²³ For Sidaama, Gasparini (1983: 262) reports about a related extended use of the lexeme 'cold', *k'iid-a*. In Sidaama bargains that are qualified as 'cold' are cheap.

²⁴ Alternatively, an usually quiet, little frequented market can be qualified as *GIC*- '(of fire, utensils on fire) not to burn properly, be lukewarm' (cf. 3.1.2.3).

- (65) *Ír-u xoom-á ikk-i-yan*
 land-mNOM fasting_period-mACC become-3mPCO-DS
buur-i dikk-ut cáal-tee'u kabár!
 butter-mGEN market-fNOM be(come)_cold[tactile]-3fPRF today.mOBL
 'It's the fasting period,²⁵ (and) not much is happening on the butter market (lit. the butter market is cold) today (i.e. there are no customers and the prices have fallen).'
- (66) *Kám, ís cáal-a-a*
 INTJ 3mNOM cold[tactile]-mPRED-mCOP2
 'He is not communicative / interactive / social apt (lit. cold).'

5.2.1. DULLNESS IS EXTREME COLD

Alemu (2016) notes a semantic extension of the term *qabad-á(ta)* '(tactile) extremely cold': In reference to a person the term is apparently used with the meaning 'idiot', cf. the dictionary definition in (67).²⁶

- (67) *Qabad-á: zah[h]-icc-i-sí²⁷ fayyím-at*
 extremely_cold-mACC go_around-CAUS1.MID-mGEN-3mPOSS health-fNOM
nann-is-sáa qax-á qall-ú manch-ú
 doubt-CAUS1-3fIPV.REL extent-mACC stupid-mACC person-SG-mACC
 'Qabada: a stupid person who makes (you) doubt about their capacity to think' (Alemu 2016: 788; glossing and translation ours)

5.2.3. SHOCK IS COLD

A person who gets a shock is conceptualised as becoming cold; see that the phrase *cáalleemmi máncu* 'a man who has become (tactile) cold' in (68) can be paraphrased as *hiliqqeemmi máncu* 'a man who is shocked, got a fright'.

- (68) *Got-iichch-ú ír-a xúujj-i=ké'*
 hyena-SG-mACC land-mOBL see-1sPCO=SEQ
cáall-eemmi mán-ch-u dagud-án wáall
 be(come)_cold[tactile]-1sPRF.REL man-SG-mNOM run-1sICO come.1sPCO
min-í aagg-óomm
 house-mACC enter-1sPFV
 'When I saw a hyena in the garden, I was shocked and ran home (lit. I, the cold man, ran, came and entered the house).'

5.2.4. ABSENCE OF THIRST IS COOLNESS

Excessive thirst is conceptualised as burning heat (55). Water satisfies the experiencer's thirst and is literally said to 'cool the heart', as seen in the excerpt from a poem in (69). The same metaphor is also attested in non-poetic data.

²⁵ In the fasting period of the Ethiopian Orthodox Church no meat and no milk products are consumed.

²⁶ Note that this semantic extension is not shared by the second author.

²⁷ The complex verb stem *zahhicc-* 'reflect, think, recognise' is based on the motion verb *zahh-* 'go around'.

- (69) *Wozan-á sigg-is-án mannoom-áta*
 heart-mACC be(come)_cool-CAUS1-3mICO body-fACC
táshsh=a'-iiha /
 comfortable.IDEO=do-mDAT
Wó'-u abb-íshsh tam-áno
 water-mNOM be(come)_much-CAUS1.3mPCO be_useful-3mIPV
re'-is-éen it-iiha
 get_ready-CAUS1-3honICO eat-mDAT

(Verse from a poem) 'To cool the heart and to make the body feel good / To cook and (then) eat, water is very useful.' (Kambaatissata 1989: 3.66)²⁸

5.2.5. CALMNESS IS COOLNESS / COLD

The Kambaata characterise a calm person as *SIGG-* 'cool' (70), which can be opposed to a talkative person, i.e. "a person of warm talk".

- (70) *Ís sigg-a-a adab-áa*
 3mNOM cool-mOBL-mCOP2 boy-mPRED
 'He is a calm (lit. cool) boy (e.g. he thinks before he talks).'

A matter that has been settled (71) and anger that has been calmed (72) are said to have cooled.²⁹ The proverb in (71) plays with the basic and the metaphorical meanings of *sigg-* 1. 'be(come) cool', 2. 'be settled'.

- (71) *Xáh-uhu-u xorósh-uhu-u*
 issue-mNOM-ADD maize_bread-mNOM-ADD
sigg-ée=da xe'-áno
 be(come)_cool-3mPFV=COND taste_good-3mIPV
 (Proverb) 'Issues and maize bread taste good when they're cool.' (Alamu & Alamaayyo 2017: 163)
- (72) *Harraashsh-i amúrr-it waal-tóo bar-i*
 timid-mGEN anger-fNOM come-3fPFV.REL day-mACC
sarb-ít sigg-ítaa-ba'a
 do_quickly-3fPCO be(come)_cool-3fIPV-NEG
 'The anger of a timid (person) does not subside (lit. cool down) easily once it has come (to the surface).' (Alamu & Alamaayyo 2017: 73)

In a similar context, the following proverb contains the causative verb *gid-is-*, lit. 'make (non-tactile) cold', in the meaning 'calm (here: one's anger)'.

- (73) *Máash-at arráb-it amurr-íta gid-is-sáa'u*
 kind-fNOM tongue-fNOM anger-fACC be(come)_cold[non-tactile]-CAUS1-3fIPV
 'A kind tongue (i.e. kind words) calms the anger.' (Kambaatissata 1989: 4.45)

Quarrelling parties are blessed as in (74). The example is also interesting from a grammatical perspective, as it illustrates the use of a plurativized temperature

²⁸ The main verb is here found sentence-medially, because the regular head-final constituent order can be changed in poems.

²⁹ Examples in Tadesse (2015: 129, 241, 251) show that the Hadiyya lexeme *sigg-* 'be(come) cold, cool' has the same extended meaning 'be settled (a matter, conflict)'.

adjective. As head of an NP and in reference to a plural number of people, the adjective receives here the morpheme *-aakk*.

- (74) *Gid-aakk-áta* *ikk-é*
 cold[non-tactile]-PL2-fACC become-2pIMP
 (Blessing for quarrelling parties:) ‘May your problem be settled/your anger be calmed (lit. May you (p) become (non-tactile) cold ones)!’

5.2.6. CONSOLATION / ABSENCE OF PAIN IS COLD / COOLNESS

The absence of emotional and physical pain is linked to cold and coolness. Thus the lexemes *GID-* ‘(non-tactile) cold’ and *SIGG-* ‘comfortably cold or warm, cool’ are used with the extended meaning ‘consoled; healed, without pain (after an injury)’ in blessings. A conventionalised Kambaata blessing for the relatives of a recently deceased person and the conventionalised answer is given in (75).

- (75) A: *Gid-is-seentá=r-u*
 be(come)_cold[non-tactile]-CAUS1-2pPFV.REL=NMZp-mNOM
gid-u
 be(come)_cold[non-tactile]-3mBEN
 B: *Gíjj-ee’u*
 be(come)_cold[non-tactile]-3mPRF
 A (= visitor): ‘My sincere condolences (lit. May what you allowed to become (non-tactile) cold, be / remain (non-tactile) cold)!’ – B (= bereaved): ‘We are consoled (lit. (It) has become (non-tactile) cold).’

The metaphor ABSENCE OF PAIN IS COLD / COOLNESS is equally reflected in the conventionalised circumcision blessing that is pronounced when the circumcised leaves the house for the first time after the intervention (76). In interviews about the old circumcision traditions, some speakers use *sigg-á*, while others employ *gid-á* with the meaning ‘healed’ – they can thus be considered synonymous in the context of blessings. In (1)(77), we see *gid-á* ‘(non-tactile) cold’ be used in a congratulation expression for a circumcised.

- (76) *Sigg-á* [*~ gid-á*] *háan-t* *fúl-i*
 cool-mACC cold[non-tactile]-mACC step-2sPCO go_out-2sIMP
 (Blessing) ‘Step out healed (lit. cool ~ (non-tactile) cold)!’
 (77) *Gid-á* *ikk-o-kke*
 cold[non-tactile]-mACC become-3mPFV-2sO
 (Congratulations) ‘You are healed (lit. (It) has become (non-tactile) cold for you).’ (AN2016-02-19)

If a Kambaata person encounters something negative and is shocked to learn about somebody’s illness, accident or dispute, a common reaction is the utterance in (78).

- (78) *Gid-á* *ih-u,* *ís!*
 cool[non-tactile]-mACC become-3mBEN 3mNOM
 ‘Heaven forbid (lit. May it be(come) cold)!’

6. Temperature terms in Highland East Cushitic

Kambaata belongs to the Highland East Cushitic (HEC) group of Cushitic, which encompasses the following languages: Hadiyya-Libido (i.e. the Hadiyya subgroup), Kambaata-Alaaba-K'abeena (i.e. the Kambaata subgroup), Sidaama, Gedeo and Burji.

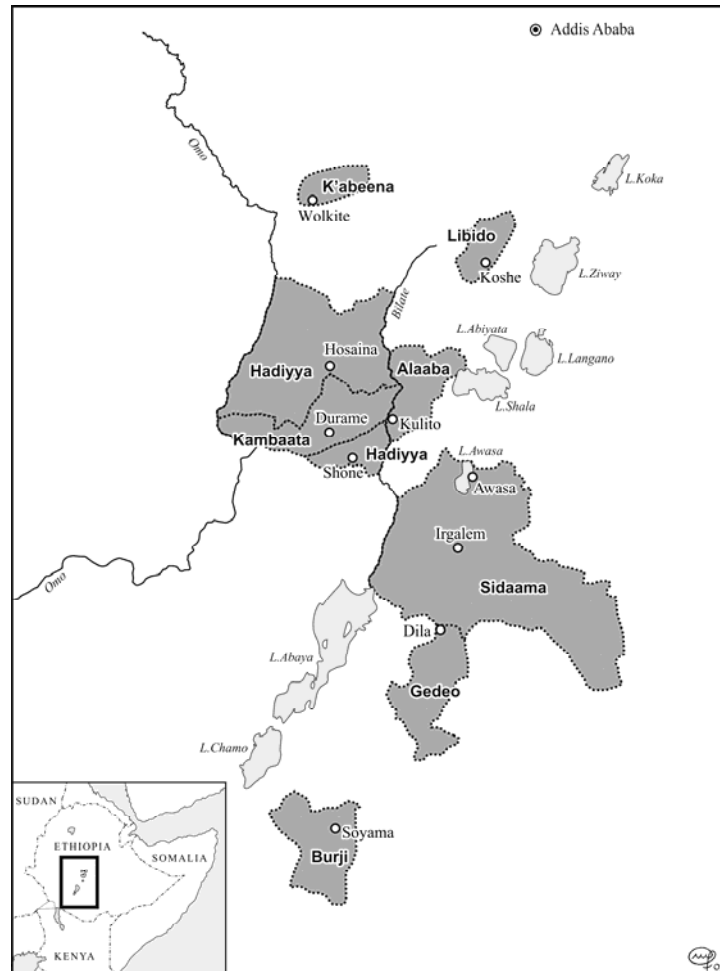


Figure 2. Highland East Cushitic languages
(Map designed by Monika Feinen, 2009, all boundaries are unofficial)

In this section, we investigate if Kambaata and its closest relatives carve up the semantic field of temperature in a similar way. We have to concentrate on domain-central temperature terms and to the tactile and ambient frame of evaluation, as the sources we consulted – entries in word lists and dictionaries as well as examples in grammars and text collections – contained no information on personal-feeling temperature. An overview of the temperature lexemes is provided in Table 8. The languages are roughly ordered from North to South. In order to allow for an easier comparison of the cognates, only bare lexical **roots** without derivational and inflectional morphology are given. K'abeena is not included in the table, as we have no data apart from the lexeme *k'iiz-* 'cold' listed in Leslau (1980: 120), of which the frame of evaluation is not specified.

Languages	‘warm, hot’	‘(tactile) cold’	‘(non-tactile) cold’	Sources
Libido	<i>eepp’-</i>	<i>sigg-</i>	(no data)	Crass n.d.
Hadiyya	<i>iibb-</i>	<i>sigg-</i>	<i>k’iid-</i>	Sim 1989, Hudson 1989, Tadesse 2015
Kambaata	<i>iib-</i>	<i>caal- /c’aal-/</i>	<i>gid-</i>	(data of the authors)
Alaaba	<i>iib-</i>	<i>k’iiz-</i>		Schneider-Blum 2007, 2013
Sidaama	<i>iibb-</i>	<i>k’iid-</i>		Gasparini 1983, Hudson 1989, Kawachi 2007
Gedeo	<i>eebb-</i>	<i>k’iid-</i>	<i>boojj-</i>	Hudson 1989, Wedekind 1990, Gasparini 1994, Eyob 2016
Burji	<i>d’ayb- oyd’-</i>	<i>kabb-</i>	<i>sirg-</i>	Sasse 1982, Hudson 1989, Roba & Wedekind 2008

Table 8. Temperature lexemes compared across HEC

We observe in Table 8 that all languages except Burji share a cognate lexical root for ‘warm’, which consists of a long high or mid vowel followed by a (mostly geminate) bilabial plosive. The root-final bilabial is ejectives in Libido and degeminated in Kambaata and Alaaba. Already in 1989, Hudson proposed **iibb-a* as the proto-HEC form for ‘warm, hot’ (1989: 81). While Kambaata uses the root *iib-* directly as a verb, adjective and noun (with different sets of inflection), some HEC languages use the roots given above for ‘warm’ only verbally and derive adjectives and nouns from them; see Alaaba *iib-aab-ú* ‘warm, hot’ and *ʔiib-an-áta* ‘warmth, heat’ (Schneider-Blum 2007: 427). Note that there is also a nominal derivational morpheme *-an-áta* found in Kambaata, which is, however, not used for the derivation of ‘warmth, heat’ from ‘warm, hot’ (Treis 2008: 165). In Hadiyya, the root *iibb-* is used for the verb, whereas the adjective is a derived form *iibb-aall-a* ‘warm, hot’ (Hudson 1989: 284, Tadesse 2015: 352). The same is true of Sidaama, where yet another derivational morpheme is used to generate the temperature adjective from the root, see *iibb-ad-o* ‘warm, hot’ (Gasparini 1983: 172). As for the lexeme ‘warm’, Burji is the odd one out. Burji has the lexeme *d’ayb-ad’-* (middle verb) for ‘warm, hot’ (Sasse 1982: 62); in Hudson (1989: 81) and Roba & Wedekind (2008) we find an additional ‘warm’ lexeme, *oyd’-*. As the consulted sources contain no sentence examples, we are unable to say whether the lexemes for ‘warm’ are restricted to different frames of temperature evaluation, objects or degrees of temperature. Neither of the two Burji ‘warm’ lexemes can be related to the cognate lexical root that is shared by all other HEC languages.³⁰

In the domain of cold temperature the situation is more complicated. As far as the limited data allows us to say, most languages seem to make a lexical distinction between ‘(tactile) cold’ and ‘(non-tactile) cold’. If we assume that this distinction was already made in Proto-HEC, then it must have been neutralised in Alaaba and Sidaama. The examples in the consulted sources show that Alaaba *k’iiz-* and Sidaama *k’iid-* are used in the tactile as well as in the ambient frame of evaluation. In (79), *k’iiz-* is used for tactile cold, in (80) for ambient cold.

³⁰ This was already observed by Sasse (1982: 14): “[A] number of characteristic diagnostic roots of HEC are lacking in Burji, e.g. (Sid.) *i[i]bb-* ‘warm’ [...], *k’iida* ‘cold’.”

ALAABA³¹

- (79) *ʔiibb^o: mookóonⁱ, k'iizzh^o: ʔangáanⁱ*
ʔiib-y^o: mook-óonⁱ, k'iiz-y^o: ʔang-áanⁱ
 be(come)_hot-3mPFV spoon-fLI be(come)_cold-3mPFV hand-fLI
 'If it [i.e. the food] is hot: with a spoon, if it is cold: with the hand' (Schneider-Blum 2009: proverb 56; glosses adapted)
- (80) *ʔarriih^a fusshiyé^ʔ k'i[i]zih^a ʔaagisshe^ʔ*
ʔarr-ih^a fussh-i-yé-ʔ
 sunlight-mDAT leave.CAUS1-EP-2pIMP-1sO
k'i[i]z-ih^a ʔaag-is-yé-ʔ
 cold-mDAT enter-CAUS1-2sIMP-1O
 'For the sun, take me out, for the cold, take me in!' (Schneider-Blum 2009: excerpt of proverb 56; glosses adapted)

For 'cold' we find five (or six) non-cognate lexical roots. The most common root is *k'iid-* in Hadiyya, Sidaama and Gedeo, which is cognate to *k'iiz-* in Alaaba. The root is used as a general term for 'cold' in Alaaba and Sidaama, for '(non-tactile) cold' in Hadiyya and for '(tactile) cold' in Gedeo. Hudson (1989: 43) and, more tentatively, Leslau (1980: 128) hypothesise that Alaaba *k'iiz-* and Hadiyya *k'iid-* are cognate with Kambaata *gid-* '(non-tactile) cold'. We are not entirely convinced that this is the case for the following reasons: We are, firstly, not aware of any other lexemes in which Alaaba *k'* (i.e. Kambaata orthography *q*) corresponds to Kambaata *g*. Secondly, whereas both Alaaba and Kambaata *z* regularly correspond to Hadiyya and Sidaama *d* (see Leslau 1980), we are not aware of lexemes in which Kambaata has retained the Proto-HEC **d* and Alaaba alone weakened it to *z*. Finally, no other cases are known in which Alaaba long *ii* corresponds to Kambaata short *i*. It seems more likely to us that Kambaata *gid-* '(non-tactile) cold' is a lexical innovation, but, admittedly, of unknown origin.

The root *sigg-* is used for '(tactile) cold' in Libido and Hadiyya and linked to the root *sigg-* 'comfortably cold or warm; cool' (§3.1.2.2) in Kambaata, where it has undergone a slight meaning change. Sasse (1982: 166) considers the Burji lexical root *sirg-* '(non-tactile) cold' as a cognate of *sigg-*, a proposal which was taken up by Hudson (1989: 43). Sasse (1982: 112) relates the Burji root *kabb-* for '(tactile) cold' tentatively to the Proto-East Cushitic root for 'cold' (**k'ab(-b-)*). The Kambaata lexical root *caal-* /*c'aal-* '(tactile) cold' is neither used by its closest relative Alaaba nor by any HEC language to express 'cold'. However, in Gasparini (1983: 54), we find a possible Sidaama cognate, *c'aal-* '(to) shade (something)'. At the is stage of documentation, we are unable to link the last remaining root for 'cold', namely Gedeo *booji-* '(non-tactile) cold', to any phonologically similar and semantically related root in another HEC language.

In his comparative HEC dictionary, Hudson (1989) assumes that there was a lexical distinction between two types of 'cold' on the Proto-HEC level, which he labels 'cold (of food)' and 'cold (of weather)'. For reasons that are not elaborated on, Hudson (1989: 43) links the proto-form **sirga* to the meaning 'cold (of food)' (= '(tactile) cold') and the proto-form **k'iida* to the meaning 'cold (of weather)' (= '(non-tactile)

³¹ The superscript vowel represented a devoiced vowel.

cold'). Given the data in Table 8, this form-meaning links made by Hudson need to be considered very tentative.

Apart from lexical differences, some morphological differences can be observed between the lexemes for 'cold' across HEC. Note, for instance, that the temperature adjectives in Hadiyya and Sidaama are derived. According to Tadesse (2015: 43), the Hadiyya adjective *k'iid-aam-o* '(non-tactile) cold' – whose use is illustrated in (81) – is derived from the noun *k'iid-a*, which he translates as 'cold weather'.³² Hadiyya shares the propriative morpheme *-aam* with Kambaata (cf. Table 3 in §2).

HADIYYA

- (81) *Ɔotoór-i dʒaadʒur-iinse k[ʔiid-aám-o*
 Ootooro-NOM Jaajura-ABL [non-tactile]cold-AAM-PRED
 'Ootooro (= place) is colder than Jaajura (= place).' (Tadesse 2015: 139;
 glosses adapted)

Furthermore, we find again the derivational morpheme *-aall* in Hadiyya *sigg-aall-a* '(tactile) cold' (Sim 1989: 127) – compare with *iibb-aall-a* 'warm, hot' above – and the derivational morpheme *-ad* in Sidaama *k'iid-ad-o* 'cold' (Gasparini 1983: 262) – compare with *iibb-ad-o* 'warm, hot' above.

Information on the extended uses of temperature terms in HEC languages is sparse. In examples of Tadesse's (2015) grammar of Hadiyya we see that 'make cold, cool' is used as to 'settle (a matter, a dispute)', a semantic extension that is also attested in Kambaata (§5.2.5). In Gasparini's (1983: 262) Sidaama dictionary, we read about two extended uses of 'cold' that are unaccounted for in Kambaata: 'cold bargains' are cheap and 'cold knives' are dull. Sidaama also shares with Kambaata the metaphor ANGER IS HEAT – see *fôggala* 'be hot, burning; get angry' (Gasparini 1983: 101).

This section has shown that some HEC languages share with Kambaata the distinction between '(tactile) cold' and '(non-tactile)', while this frame-related distinction is absent in the domain of warm temperature. It would merit a broader study in the future to investigate whether this lexicalisation pattern is shared by other languages of the family or of the Ethiopian linguistic area. Another desideratum of future research is a cross-linguistic study of personal-feeling temperature that would allow us to judge whether other languages of the area also make a constructional difference between the expression of personal-feeling temperature and the expression of tactile and ambient temperature.

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Abbreviations

A_	adjective
AAM	propriative

³² Hudson considers *k'iid-a* an adjective (1989: 43, 289).

ABL	ablative
ADD	additive ('also', 'and')
BDV	benedictive
CAUS1	simple causative
COND	conditional
COP1	<i>yoo</i> -copula
COP2	<i>-ha/-ta</i> -copula
COP3	<i>VV-t</i> -copula
DAT	dative
DEF	definite
DEM1	proximal demonstrative
DEM2	medial demonstrative
DM	discourse marker
DO	direct object
DS	different subject
EP	epenthesis
f	feminine
GEN	genitive
hon	honorific, impersonal
ICO	imperfective converb
ICP	instrumental-comitative-perlative
IDEO	ideophone
IMP	imperative
INTJ	interjection
IPV	imperfective
itr.	intransitive
JUS	jussive
L	linker
LI	locative, instrumental
LOC	locative
m	masculine
MID	middle
N	pragmatically determined morpheme (function as yet unclear)
NCO	negative converb
NEG	negation
NMZ1a	nominalisation marked by a long vowel
NMZp	nominalisation with = <i>r</i>
NOM	nominative
NREL	negative relative
O	object
OBL	oblique
p	plural
P_	pronoun
PASS	passive
PCO	perfective converb
PFV	perfective
PL1	plurative -C
PL2	plurative - <i>aakk</i>
PN	proper noun
POSS	possessive
PRAG1-4	pragmatically determined morphemes (functions as yet unclear)
PRED	predicative
PRF	perfect

PROG	progressive
Q	question
QU	quality noun
REAS	reason
REL	relative
s	singular
S	subject
SEG	sequential
SG	singulative
tr.	transitive
VOC	vocative
VV	vowel lengthening

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