Body Parts in Hamar

A preliminary research on aspects of the use of body part terms in the Hamar language

Arende de Wit

MA Thesis Linguistics (Linguistics)
Leiden University
Supervisor: Dr. F.K. Ameka
Second Reader: Dr. S. Petrollino
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Universiteit Leiden
The Netherlands

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Abstract

This thesis aims at providing a preliminary description of body part terms and their use in Hamar, a language of Ethiopia. Mainly based on elicited data from a native speaker, an overview is given of body part terms in Hamar. Several lexical and grammatical features of body part terms are discussed. It is explained why a body part partonomy could not be established.

Going beyond the human body, animal body part terms and their relation to human body part terms are explored. The way in which Hamar denotes the 'top' and the 'back' of objects is based on anthropomorphic and zoomorphic models. It is argued that body part mapping in Hamar is mainly due to an analogy in shape/appearance, space/position and function.

Hamar uses body part terms to express deictic orientation, similar to other African languages. In doing so, the language interacts with case markers and elevation deictics. Based on the four-stage model of Heine et al. (1991), it is argued that Hamar body parts have only partly been grammaticalized. Locational body part nouns usually appear as BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER and are part of a genitive construction.

Keywords: African languages; analogy; body part mapping; body part terms; grammaticalization; Hamar; lexical semantics; metaphor; partonomy; spatial relations

Abbreviations

1	first person	INCL	inclusive marker
2	second person	INS	instrumental case
3	third person	IPFV	imperfective
ABL	ablative case	LOC	locative case
ACC	accusative case	M	masculine
AD	adessive case	NOM	nominative
AFF	affective case	OBL	oblique case
ALL	allative case	PASS	passive
CNV	general converb	PER	perlative case
CON	construct state	PF	perfect
COP	copula	PFV	perfective
DAT	dative case	PL	plural
DEM	demonstrative	POSS	possessive pronoun
F	feminine	PRES	present
GEN	genitive case	S	subject
IDEO	ideophone	SE	same-event converb
IMP	imperative	SG	singular
IN	inessive case	SLEV	same-level deixis

PSPV	Picture Series for Positional Verbs (Ameka, De Witte and Wilkins 1999)
TRPS	Topological Relations Picture Series (Bowerman and Pederson 1992)

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1. Introduction

"People close to town use the word *gománno* for the wheel. But it is from Amharic. *Kánkinsa róono* 'leg/foot of the car' is good, because people also have *roo* 'leg/foot'. They know it and then they can also use it for the car."

This quote from my consultant illustrates different aspects of this thesis. Firstly, it shows that human beings have a body and that they distinguish different parts of it. Secondly, it shows that the human body can be used as a 'toolbox' to denote parts of different objects. And thirdly, it shows the advantage of doing so: since every human being has a body, everyone will recognize this type of terminology.

The question to be answered in this thesis is: how are body parts used in the Hamar language? The focus of this thesis is on body part nomenclature, body part mapping and the grammaticalization of body part nouns. In this introductory chapter, a theoretical background is given. Additionally, an overview of some aspects of Hamar is provided, as well as information on the methodology used to collect the data and the structure of this thesis.

1.1 Theoretical Background

Discussing every aspect of 'body part terms' in the literature would be beyond the scope of this thesis. In this section, I describe different areas of body part research and some of the literature belonging to it. See Dingemanse (2006) for a more extensive overview.

1.1.1 Describing and Comparing Body Part Nomenclature

One aspect of body part terms that is discussed early in the linguistic literature has to do with the comparison of 'body part labels' in different languages. Adolf Zauner recognizes two ways in which the relation between word and meaning can be researched. Semasiology takes the word as a starting point to try and find the meaning, whereas onomasiology starts from a meaning or concept (*begriff*) and studies which word is assigned to this concept by a language (Zauner 1902:3-4). Since all human beings have body parts, onomasiology can successfully be applied to this domain in researching what terms are used in different languages for different concepts (Zauner 1902:5).[1]

The comparative approach Zauner uses is already present in the philological and historical approach in linguistics at the time. It mainly aims to find phonological and lexical similarities which allow for a reconstruction of a language or language family. Body part terms are considered appropriate for this approach, as can be seen in the Swadesh list, which contains several body part terms. Homburger (1929) takes such a comparative approach to body part terms in African languages. She wanted to find more or less similar terminology for body parts across different languages, taking especially phonological criteria into account for measuring similarity (Homburger 1929:5).

The interest for body part nomenclature returns in the middle of the 20th century, along with a general interest in 'folk nomenclature' for different areas. A famous example of this is the work

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[1] However, body part terms may change over time. Almost a century later, Wilkins (1996) provides examples of words that have become body part terms over time. He actually prefers the term 'parts of a person' over 'body parts', given that 'body' is an unstable term in itself (Wilkins 1996:271).

of Berlin and Kay (1969) on color. This line of research shows that "the same substance could have a different form imposed on it by different languages" (Andersen 1978:338).

For body part nomenclature, the work of Brown (1976) and Andersen (1978), among others, has been fundamental. In their work, they focus not only on universal claims for body part nomenclature, such as the statement that the arm (and hand) are always labeled with a primary lexeme (Brown 1976:403; 405), but also on body part partonomy.

An example of a comparative study which investigates the nomenclature and partonomy of different languages is Schladt (1997), comparing eighteen Kenyan languages from three different language families. He also discusses topics like partonomy and grammatical properties of body part terms.

A more recent noteworthy publication on body part nomenclature and partonomy is the special issue of *Language Sciences* (Enfield, Majid & Van Staden 2006a), in which ten languages are discussed, along with an elicitation guide and a body coloring task. The authors from this volume provide additional proof, but also counterexamples for the universals established in the 1970's.

1.1.2   The Body in Other Parts of Language

Body part terms have also been studied in their extended use, besides the nomenclature and partonomy of body parts. The extensions I mention in this section are body part mapping onto objects, grammaticalization and the use of body part terms in emotion expressions. These are all cases of 'embodiment', in which the body serves as a source for other concepts (Kraska-Szlenk 2014:16) and provides a framework for talking about abstract, schematic notions (Gibbs 2006:107).

The body is the general instrument of understanding the perceived world (Merleau-Ponty 1945:272). 'Embodiment' can therefore be described as "the bodily and sensorimotor basis of phenomena such as *meaning, mind, cognition* and *language*" (Ziemke and Frank 2007:1, italics in original). With such an approach, the area of cognitive sciences is entered (see Lakoff and Johnson [1999] for a more philosophical approach to embodiment). Literature on embodiment, often including studies taking a more grammatical approach, has grown rapidly in the past decades. Some examples are Ziemke, Zlatev and Frank (2007), Maalej and Yu (2011), Brenzinger and Kraska-Szlenk (2014) and Kraska-Szlenk (2019; 2020).

De Witte, who describes the body as serving as a bridge between the inner and the outer (1948:13), already gives some examples of phenomena like grammaticalization and body part mapping, e.g. in the meaning and use of 'head', which he describes as 'the highest part', 'crown' or 'high', but also 'the front part' and 'river head' (De Witte 1948:87). This shows body part mapping onto objects according to anthropomorphic and zoomorphic models, further discussed in Svorou (1994) and Heine (1997).

Although De Witte perhaps was not familiar with the concept of grammaticalization as such, his analyses are somewhat similar to those of Heine and Kuteva (2002). The development of body part nouns into grammatical elements, especially adpositions, is discussed in works like Heine, Claudi and Hünnemeyer (1991), Bowden (1992), Hopper and Traugott (1993), Svorou (1994) and Hagège (2010). How body part terms behave in grammatical constructions, especially with regard to possession, is treated in Chappell and McGregor (1996).

Crucial in the extension of body part terms are analogy, metonymy and metaphor (see Chapter 3). Although definitions differ in the literature, metonymy can be seen as a source or vehicle that provides mental access to an associated entity. Metaphor is not necessarily about

an associated entity, but includes projecting something from one (concrete) domain onto another (abstract) domain (Heine 2014:15; Lakoff and Johnson 1980:105). Some authors state that the distinction between metonymy and metaphor is 'fuzzy' (Maalej and Yu 2011:8) and even the term 'metaphtonymy' has been coined (Goossens 2003:349).

A specific metaphoric use of body parts is their use in emotion expressions. It has long been recognized that "the body is explicitly referred to in conventional description of emotion in languages around the world" (Enfield and Wierzbicka 2002:1). Dimmendaal (2015) shows instances of these emotion expressions, providing examples from African languages in which feelings of happiness are described as having a 'soft stomach' or a 'soft liver' (Dimmendaal 2015:154). Wierzbicka (1999) and Ponsonnet (2014) discuss other examples of body parts being used in emotion expressions.

1.2 Hamar

Hamar is a South Omotic (Afro-Asiatic) language spoken by about 47.000 people in the lower Omo valley of South West Ethiopia (Petrollino 2016:1; Eberhard, Simons and Fennig 2019). Hamar, the language of a people with the same name, is mutually intelligible with varieties spoken by the Banna and Bashadda people (Petrollino 2016:1). The status of the language is vigorous (Eberhard et al. 2019). It is used in daily interaction and by all generations (Petrollino 2016:2). The language can be written in both Latin and Ge'ez (Amharic) script, since no official orthography has been established yet. The Hamar can be classified as an agro-pastoralist society (Petrollino 2016:1).

Anthropological research in Hamar has especially been done by Jean Lydall and Ivo Strecker (e.g. Lydall and Strecker 1979). Sara Petrollino (2016; 2019) did recent work on the Hamar language. Other recently published work on Hamar is from the electronic journal *Studies in Ethiopian Languages,* instituted by the Japanese Association for Ethiopian Linguistics. Articles on Hamar include Yigezu and Sisay Mendisu (2015), Takahashi (2015) and Yigezu (2016). For a more detailed overview of work on the Hamar language, see Petrollino (2016:4-5) and Yigezu (2016:110-111).

Most of the focus of describing the Hamar language has been on phonology, morphology and syntax, although Lydall and Strecker's anthropological work includes linguistic aspects as well. An example of this is a paper on ideophones in Hamar (Lydall 2000). In this thesis, I want to take a semantic approach to the particular domain of body parts. Petrollino makes some notes on body parts in her grammar, but a detailed study on body parts in Hamar has not been published to the best of my knowledge.

Hamar has several dialectal varieties. Items from Petrollino (2016) might therefore differ from my data, given that Petrollino did her research in a different area than my consultant is from. In this thesis, this mainly shows in the fact that some words are slightly different, either in using some different phonemes or using a different word altogether. There is, for example, a difference in the third person pronoun. Petrollino encountered *kidí*, whereas I found *kisí*. Another example is the word for 'sheep', which she found as *yaatâ*, whereas I encountered it as *γéεta.*

In order to understand the data shown throughout this thesis, I give a short typological overview of some phonological and morpho-syntactic aspects of the language.

1.2.1 Phonology

An overview of Hamar consonants is given in Table 1 (based on Petrollino 2016:9).[2] The IPA representation is displayed between brackets in cases where it differs from the orthography:

Table 1. **Consonant phonemes in Hamar.**

	Bilabial	**Alveolar**	**Palatoalveolar**	**Velar**	**Uvular**	**Glottal**
Stops	p b	t d	c [tʃ] j [ʤ]	k g	q	
Implosives	ɓ	ɗ		(ɠ)		
Ejectives		t'	c' [tʃ']			
Fricatives		s z	sh [ʃ]	x		
Nasals	m	n	ɲ			
Liquids		l, r				
Glides	w		y [j]			ʔ, h [ħ]

Beside the phonemes in Table 1, it should be mentioned that /p/ can be realized as both [p] and [ɸ]. Similarly, /b/ can be realized as both [b] and [β]. This seems to be a matter of free variation. I write these sounds as either <p> or <f> and <b> or <v>. Although Petrollino (2016:9) deems /x/ to be a separate phoneme, /k/ can be realized as both [k] and [x], similar to /q/, which can be realized as either [q] or [x]. Some of these consonants, for example /t/, have contrastive gemination.

Table 2 shows the phonemic vowels of Hamar:

Table 2. **Vowel phonemes in Hamar.**

	Front	**Central**	**Back**
High	i		u
Mid High	e		o
Mid Low	ɛ		ɔ
Low		a	

All of the vowel phonemes in Table 2 have contrastive vowel length, which is indicated by writing the vowel twice in the orthography.

The topic of tone and stress in Hamar is a debated issue, of which an exhaustive treatment is beyond the scope of this thesis. On the one hand, Yigezu (2016:113) argues that Hamar is "a register tone language with two tone levels, high and low", although he also states that further investigation is necessary (2016:114). On the other hand, Petrollino (2019:300) states that Hamar displays properties of both stress and tone, in which there is one prominent syllable in each word (Petrollino 2019:293). In nouns, accent is lexically decided, whereas in verbs, it is on the final syllable of the citation form (*woyá* 'to stand', for example, in which the citation form is the singular imperative). Note that long vowels do not necessarily attract accent. The interaction of the masculine gender marker and the lexical accent of roots may result into a falling pitch, indicated by a circumflex, which can be attested as a high pitch in actual speech (Petrollino 2019:297-298). High pitch and accent are indicated by an acute diacritic.

In this domain, dialectal differences may play a role. Consider *naasâ* according to Petrollino, whereas I found *náasa* for 'boy', and *yaatâ* vs. *yέɛta* for sheep.

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[2] I have adopted the orthography of Petrollino in this thesis, given that it matches what I found in the language.

1.2.2 Morphology and Syntax

One may argue that the domain of morphology and syntax does not necessarily need to be described when just providing body part nomenclature (e.g. Schladt 1997:22). However, morphology and syntax is important in talking meaningfully about the use of body part terms in a language, for example when exploring the use of these body part terms in other domains of the language. Besides, nominal morphology applies to body part nouns.

Nouns in Hamar do not have an inherent gender, but each noun can be inflected for either masculine, feminine or plural use. This applies to both animate and inanimate nouns. The basic form of a noun consists of a root which sometimes has a terminal vowel attached to it (Petrollino 2016:71). This basic form is also the citation form. A noun in Hamar can thus have four different forms: basic, masculine, feminine or plural. Nouns are usually inflected by the addition of suffixes. These suffixes either attach to the root of a form plus a terminal vowel, or just the root (Petrollino 2016:71).[3]

Table 3 provides an overview of the different suffixes for masculine, feminine and plural inflection (based on Petrollino 2016:72):

Table 3. **Nominal suffixes in Hamar.**

Masculine	Feminine	Plural
-â	-no	-na
-tâ	-tóno	

The inflections of the basic forms *meté* 'head' and *gayá* 'baboon' show the use of these suffixes (for the masculine form *metɛ́,* the vowel of the stem (-*e*) and the vowel of the suffix (-*â*) merge into -*ɛ́*):

meté	'head'	*gayá*	'baboon'
metɛ́	'head.M'	*gai-tâ*	'baboon-M'
meté-no	'head-F'	*gayá-no/gai-tóno*	'baboon-F'
meté-na	'head-PL'	*gayá-na*	'baboon-PL'

Six declensions for nouns can be distinguished, depending on the phonological behavior and suffixes of each noun (Petrollino 2016:73). Note that the masculine inflections, -*â* and -*tâ*, can both be used for body part nouns. On the other hand, the feminine -*tóno* is mainly used for animals and ethnonyms (Petrollino 2016:82). It does not occur for body part nouns.

The feminine inflection shown above only occurs in subject position. In other cases, inflection is done by means of -N 'F.OBL' (also see Section 2.2.1 and 4.4).

Nominal inflections in Hamar do not just display the gender of animate nouns. Feminine forms may indicate an augmentative, whereas masculine forms convey a diminutive. A big house, for example, is *onnó* 'house.F', whereas a small house is *ɔɔnɔ́* 'house.M'. Besides, the gender may say something about the degree of 'plurality' or 'collectiveness'. *Shundó* (< **shud-nó*) 'grass.F' indicates a collection of blades of grass. One single blade of grass is *shudɛ́* 'grass.M'. *Shunɗá* 'grass.PL' conveys a paucal (Petrollino 2016:79), indicating 'some blades of grass'. Inflected nouns are considered definite, the basic forms are indefinite.

When forming a noun phrase, a noun must be inflected for masculine, feminine or plural in order to be modified. In such a noun phrase, for example *onnó gaarró* 'the big house', the word

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[3] Given that the suffix cannot always be clearly distinguished from the root or stem of a noun, it may not be suffixed in the examples in this thesis but rather analyzed as part of the form.

order is head-modifier. This word order also applies to other modifiers such as demonstratives, numerals and possessive pronouns (Petrollino 2016:159). However, it does not apply to genitive relations, marked by the case marker *-sa*. In this case, the modifier precedes the head (Petrollino 2016:195). An example of this is the aforementioned *kánkin-sa róono* 'leg/foot of the car', in which *róo-no* 'leg/foot-F' is the 'head' or 'possessed', whereas *kánki-n* 'car-F.OBL' is the 'modifier' or 'possessor'.

Hamar uses case markers to convey a relation between one noun and another (see Section 4.2, in which I discuss locational case markers). Note that case markers are used at a phrasal level.

Hamar is a nominative-accusative language, given that the object of a transitive sentence (optionally) gets marked with the accusative case marker *-ɗan*, whereas the subject does not get any form of case marking.

The order of head-modifier also does not apply on clause level or sentence level. Hamar is a verb-final language, with a preferred word order of SOV, as example (1) shows:

(1)   *ínta*   *seené-ɗan*   *aash-ídi-ne*
        1SG   stone.M-ACC   hide-PF-COP
        'I hide the stone'

In example (1), the verb *aash-ídi-ne* 'hide-PF-COP' is at the end of the clause, whereas the subject *ínta* '1SG' is in the first slot.

Verbs in Hamar usually get suffixes, except for person markers, which precede the root or stem. With some suffixes, verbs do not get person markers, in which an explicitly stated subject is required (Petrollino 2016:150). The passive and causative are formed by derivation of the verb root.

1.3 Data and Methodology

I acquired the data for this thesis in the following ways. I studied the basics of the Hamar language and Hamar body part terms with a native speaker during the third year of my Bachelor in Descriptive Linguistics in the courses Linguistic Fieldwork A and B at Leiden University. Some of the data used in this thesis are from these classes.

As an additional source of data, I used examples from *A Grammar of Hamar* by Sara Petrollino (2016). The author of this grammar also allowed me to examine unpublished Hamar texts.

Most of the data used for this thesis have been gathered via elicitation sessions with the aforementioned speaker of Hamar. Originally, he is from Turmi, one of the main Hamar towns. Currently, he is the only speaker of Hamar residing in the Netherlands, where he has lived for about three years now. The elicitation sessions took place in the Dutch city of Rotterdam.

During elicitation, I used drawings of the body to acquire body part terms. Drawings of the body were also used to let the speaker color the location and range of certain body parts. Additionally, I used pictures of animals and objects to test the way in which body part terms are extended. Most of these pictures were taken in Hamar, some were pictures of objects from the internet. In order to test locational expressions, I used a paper house, plastic toys such as a boy, a car and animals, and a traditional *shárqa* 'calabash'. I also used selected pictures from two toolkits, the Topological Relations Picture Series (TRPS; Bowerman and Pederson 1992) and the Picture Series for Positional Verbs (PSPV; Ameka, De Witte and Wilkins 1999). The TRPS toolkit consists of 71 drawings, with two or more objects on each drawing. These drawings can be used

to elicit expressions for topological relations. The PSPV toolkit, which includes 68 photographs of objects in a certain relation to 'ground items' like trees and baskets, can be used similarly, with a specific focus on eliciting positional verbs. In relevant examples in this thesis, the toolkit and the number of the picture is mentioned. During the sessions, I often asked (follow-up) questions without using additional stimuli. All sessions were recorded and they have mostly been transcribed.

1.4 Structure of the Thesis

The structure of this thesis is as follows. In Chapter 2, I discuss Hamar body part terminology. I also discuss grammatical features of these body part terms (Section 2.2). In Section 2.3, I make some remarks on Hamar body part partonomy.

In Chapter 3, I go into the extension of body parts in the Hamar language. First, animal body part terms and their relation to human body part terms are discussed. Section 3.2 examines how Hamar fits into the anthropomorphic and zoomorphic models. Consequently, the mapping of body part terms onto inanimate objects is treated in Section 3.3.

In Chapter 4, the focus is on the grammaticalization of body part terms in Hamar. Since it is common for African languages to use body part terms in describing space, this is discussed in Section 4.1. In Section 4.2, I discuss locational case markers, elevation deictics and how they interact with body part terms. An overview of how body part terms are used in spatial grams in Hamar is given in Section 4.3. In Section 4.4, the degree of grammaticalization of Hamar body part terms is discussed. Chapter 5 concludes this thesis.

2. Hamar Body Part Nomenclature

In this chapter, the body part terms as they were found during the research are discussed. In Section 2.1, I provide the labels for different body parts along with morphemic glosses. In Section 2.2, I discuss some grammatical issues with regard to body part terms. Section 2.3 treats the problems with establishing a partonomy of Hamar body parts.

2.1 The Labeling of the Body

In this section, I present body part nomenclature, divided into several parts in order to help the reader keep track. Some comments are made after each table. Complex body part terms are ordered according to their (lack of) use of the genitive case marker *-sa*, in order to clarify the discussion in Section 2.1.5 and 2.2.2. In cases where a complex form has been attested both with and without this genitive case marker, it is put between brackets.

The word most often used to denote the human body in Hamar is *zará*. This form is different from *éedi* 'person'. Besides *zará*, there is a form *bíshi*. This form was offered for 'skin', but also for 'body', which points to polysemy. *Bíshi* can be used in a sense of 'exterior' or 'appearance', partly overlapping with the English notion of 'color'. This cannot be done for *zará*, as examples (2a-b) show:

(2)   (a)   *koisÉ*   *hanté-sa*   *bíshi-no*   *hátta*   *hamá-ne*
         calabash.M   2SG.M.POSS-GEN   body-F   how/what   say-COP
         'what does the appearance of your calabash say?'

   *(b)   *koisÉ*   *hanté-sa*   *zará-no*   *hátta*   *hamá-ne*
         calabash.M   2SG.M.POSS-GEN   body-F   how/what   say-COP
         Intended: 'what does the appearance of your calabash say?'

Example (2a) is acceptable to the speaker, whereas (2b) is ungrammatical. This denotes a difference between *zará* and *bíshi*, although the exact semantic difference between these forms remains to be uncovered in more detail.

Regarding 'skin', the term *qúuro* was also offered, being described as the coverage of the flesh. It was also used to denote the shaved skin of animals and the peel of a banana. This points to a notion of 'hide'. Given that it was used for humans as well, one could say that *bíshi* denotes a thin exterior or coverage, whereas *qúuro* is thicker and more stiff. Petrollino (2016:312) analyses *qúuro* as 'face wrinkle'. As far as I could find, my consultant did not (primarily) use *qúuro* for 'face wrinkle'.

2.1.1 The Head, the Face and the Neck

Table 4 displays Hamar body part terms concerning the head, the face and the neck, divided into simplex and complex terms:

Table 4. Head, face and neck body part terms in Hamar.

Hamar	Gloss	Translation	Notes
Simplex			
metí ~ meté	'head'	'head'	
ílle	'crown'	'crown'	
síiti	'hair'	'hair'	
qáami	'ear'	'ear'	
wɔtí	'forehead'	'forehead'	
áafi	'eye'	'eye'	
núki	'nose'	'nose'	
aafó	'mouth'	'mouth'	
kárc'a	'cheek'	'cheek'	
bóoshi ~ búushi	'chin'	'chin'	
ási	'teeth'	'teeth'	
díini	'gums'	'gums'	
gigerí	'molar.teeth'	'molar teeth'	
kasál	'canine.teeth'	'canine teeth'	
atáb	'tongue'	'tongue'	
qɔ́c'a	'neck'	'neck'	sides and back of the neck
lúquma	'neck'	'neck'	back of the neck
izáq	'neck'	'neck'	front of the neck
qórci	'throat'	'throat'	
đánga	'uvula'	'uvula'	
qomóro	'Adam's.apple'	'Adam's apple'	
Complex			
núki zoozí	'nose nasal.bone'	'nasal bone'	
qáami c'ánc'eme	'ear temporal.bone'	'temporal bone'	*kárc'a c'ánc'eme* is also possible
tímana gátti	'boiled.grain.PL ?'	'temple'	
meté ílle	'head crown'	'crown'	
áafo síiti	'mouth hair'	'moustache'	
bóoshi síiti	'chin hair'	'beard'	
áafi síiti	'eye hair'	'eye lash'	
núki síiti	'nose hair'	'nose hair'	
áafi shedé	'eye iris'	'iris'	
qɔ́c'a leefí	'neck bone'	'clavicle'	
metí leefí	'head bone'	'skull'	
áafi kerí	'eye door'	'face'	
áafo(-sa) qúuro	'mouth(-GEN) skin'	'lip'	
áafi (kerí)(-sa) silé ~ síle	'eye (door) (-GEN) feather'	'eyebrow'	'feather' translation uncertain
núki(-sa) óolo	'nose(-GEN) hole'	'nostril'	
qáami-sa óolo	'ear-GEN hole'	'ear hole'	beginning of the ear canal

As Table 4 shows, most body part terms that could be called 'primary' (Brown 1976:402) are monolexemic. An exception is *áafi kerí* 'eye door > face'. Brown and Witkowski (1983) recognize the relationship between 'eye' and 'face', presenting examples from languages in which the forms for 'eye' and 'face' are related or even polysemous. They do not give the expression 'door of the eye' as a way of denoting 'face'. The Hamar term *aafó(-sa) qúuro* 'hide of the mouth > lip' is also complex.

There are two forms related to 'temple'. My consultant pointed out that *qáami c'ánc'eme* 'temporal bone' is a hard part, the bone, whereas *tímana gátti* 'temple' indicates the 'hole' between the eye and the ear. Although I have not been able to find the meaning of *gátti*, the consultant explained that *tíma* 'boiled (sorghum) grain' has to be chewed, given that this grain is boiled rather than made into a powder. Chewing these hard grains may cause pain to the temple, hence the name.

The term *aafó* 'mouth' has various uses in Hamar. In the first place, the way in which Hamar people denote their language is *Hámar aafó* 'Hamar mouth', thus illustrating a common use of 'mouth' as 'language' in Ethiopian languages. *Aafó* can also be used as 'word' or 'message', as example (3) shows:

(3) *kodí*   *agá-rra*   *ɛ́ɛna-na*   *qánte*   *aafó*   *gi-idí*
     3SG.F   DEM.M-ABL   person.PL-DAT   DAT   mouth   tell-PF
     'she told the message to the men' (Petrollino 2016:111)

In example (3), *aafó* 'mouth' is used in the meaning of 'message'. A different use of *aafó* 'mouth' occurs in the numerals. Partly based on a vigesimal system, the Hamar counting system uses *aafó* 'mouth' to denote digits that are not enough to form a 'complete person' (= twenty) yet. An example of this is (4):

(4) *éedi*   *kála*   *kaisá*   *aafó*   *tabí*   *kála*
     person   one   complete   mouth   ten   one
     'thirty-one (literally: one complete person and eleven mouths)'

In example (4), there is one 'complete person' and there are eleven digits left, denoted here as 'mouths'. *Aafó* is also used in the meaning of 'opening' (see Section 3.3).

One of the rituals and traditions with regard to 'teeth' that used to occur is related to the Hamar concept of *míngi*, which can roughly be glossed as 'impure'. In former times, a child was considered *náasi míngi* 'an impure child' when it got its top front teeth before it got its lower teeth. If this happened, a child was killed or thrown away in the bush, because it was believed that such a child would bring bad fortune over the people. This tradition is mentioned in the literature (Lydall and Strecker 1979:147; Petrollino 2016:309), but the consultant stated that the Hamar do not practice it anymore.

2.1.2 Upper Limbs and Lower Limbs

Table 5 provides an overview of the 'arms' (including the shoulders) and 'legs':

Table 5. Parts of Hamar upper limbs and lower limbs.

Hamar	Gloss	Translation	Notes
Simplex			
aan	'arm/hand'	'arm/hand'	
géle	'shoulder'	'shoulder'	
babát ~ babáti	'armpit'	'armpit'	
gutúm	'upper.arm'	'upper arm'	
qoosí	'elbow'	'elbow'	
sílqa	'finger'	'finger'	(cf. Petrollino 2016:313-314)
gushó	'nail'	'nail'	
roo	'leg/foot'	'leg/foot'	
qaldó	'thigh'	'thigh'	
buqó	'knee'	'knee'	
zoolí	'lower.leg'	'lower leg'	
mulí	'back.of.the.lower.leg'	'back part of the lower leg'	
múrda	'calf'	'calf'	
táana	'heel'	'heel'	
súrki	'toe'	'toe'	
dúmai	'big.digit'	'thumb' or 'big toe'	
kalí	'small.digit'	'pinky finger' or 'little toe'	
Complex			
babáti síiti	'armpit hair'	'armpit hair'	
áan(-sa) c'ɛʔɛ́	'arm/hand(-GEN) hand.palm'	'hand palm'	
róo(-sa) tigé	'leg/foot(-GEN) foot.sole'	'sole of the foot'	
áan-sa káanta	'arm/hand-GEN joint'	'wrist'	
róo-sa káanta	'leg/foot-GEN joint'	'knee joint'	
táana-sa qáwa	'heel-GEN Achilles.tendon'	'Achilles tendon'	

Table 5 shows that Hamar has no separate forms for 'arm' and 'hand', or for 'leg' and 'foot'. This is a common feature in languages all over the world, such as Hebrew or Chinese. Van Staden and Majid (2006:159) distinguish three different types of languages with regard to this problem. Type I languages, such as English, have different terms for 'arm', 'hand', 'leg' and 'foot'. Type II languages, such as Hamar, have one word for 'arm/hand' and one word for 'leg/foot'. Type III languages have different terms for 'arm' and 'hand', but not for 'leg' and 'foot'. The question that arises, especially for type II languages, is whether speakers of these languages consider 'arm' and 'hand' to be one body part, or whether a term like *aan* 'arm/hand' is polysemous. In order to investigate this, the 'body coloring test' was developed, in which speakers are asked to

color a body part. This should result in an overview of the range of these body part terms in the mind of speakers. Figure 1a-b displays the results for Hamar:

Figure 1a. The range of *aan.*   Figure 1b. The range of *roo.*

From Figure 1a-b, one could conclude that *aan* 'arm/hand' and *roo* 'leg/foot' respectively are considered to be just one limb, rather than these terms being polysemous. One may also argue that the fact that the speaker sometimes pointed to his arm while talking about the hand points into this direction. However, Wierzbicka (2007:16-17) argues that the coloring method is not valid to test this question and that a semantic theory is necessary to decide whether or not a word is polysemous. Thus, a decisive answer cannot be given based on the data.

The analysis presented in Table 5 differs in some areas from Petrollino (2016), who, inter alia, analyzed *sílqa* as 'knuckle' and *súrki* 'toe' as either 'finger' or 'toe'. Based on my data, I have come to a different conclusion (also see Section 3.1).

I once attested *mulí* 'back part of the lower leg' as the back part of the lower arm. *Dúmai* 'thumb/big toe', *kalí* 'pinky finger/little toe' and *gushó* 'nail' apply to both the upper limbs and the lower limbs. Although some languages would add additional terminology when such an item is part of the leg (Schladt 1997:81), this is not obligatorily the case in Hamar. There are no specific terms for the other fingers or toes in Hamar. The word for the numeral 'one', *kála*, is derived from *kalí* 'pinky finger/little toe' (Petrollino 2016:128).

Regarding the difference between *géle* and *gutúm*, the speaker gave both as 'shoulder' during elicitation, although he put his hand on different places throughout the sessions. Petrollino gives both 'upper arm' (2016:305) and 'upper arm and shoulders' (2016:331) as a translation of *gutúm.* As Figure 2a-b shows, there is some overlap between *géle* and *gutúm*:

Figure 2a. The range of *géle.*   Figure 2b. The range of *gutúm.*

Figure 2 shows that *géle* is the part between the neck and the arm, whereas *gutúm* includes a part of the shoulder and the upper arm, ending above the elbow. When choosing an English equivalent, 'shoulder' would probably match best with *géle*, whereas 'upper arm' is the best option for *gutúm.*

2.1.3   The Torso and Intimate Parts

Table 6 provides an overview of both the front and the back of the torso, including some intimate part terms:

Table 6. Parts of the Hamar torso and intimate parts.

Hamar	Gloss	Translation	Notes
Simplex			
sadá	'chest'	'chest'	
amí	'breast'	'breast'	
ii	'belly'	'belly'	
gulɗánt'i	'belly.button'	'belly button'	
buusí	'pubic.area'	'pubic area'	
qánsha	'pubic.bones'	'pubic bones'	
samá	'penis'	'penis'	
shoró	'testicles'	'testicles'	
qáɲa	'vagina'	'vagina'	
qúnɗe	'clitoris'	'clitoris'	
qánɗi	'groin'	'groin'	
zuló	'back'	'back'	
buudó	'back'	'back'	
láshfa	'shoulder.blade'	'shoulder blade'	
déebawa	'rhomboids'	'rhomboids'	
legí	'ribs'	'ribs'	
deemí	'side'	'side'	
bágade	'loin'	'loin'	
kárna	'pelvis'	'pelvis'	Also used for 'waist'
wongóro	'pelvic.bones'	'pelvic bones'	Also used for 'hip'
tuɗí	'buttock'	'buttock'	
Complex			
zíiga leefí	'spine bone'	'spine'	
samá síiti	'penis hair'	'pubic hair (male)'	
buusí síiti	'pubic.area hair'	'pubic hair'	
sadá-sa síiti	'chest-GEN hair'	'chest hair'	
amí-sa aafó	'breast-GEN mouth'	'nipple'	
tuɗí-sa bakí	'buttock-GEN bifurcation'	'anal cleft'	
tuɗí-sa óolo	'buttock-GEN hole'	'anus'	

Apparently, there is no term for 'torso' or 'trunk' in Hamar. There is a chest, an abdomen and a back, but not an overarching term. Although there are more languages like this, linguists initially proposed that all languages of the world have labels for 'head', 'trunk', 'arm' and 'leg' (Majid 2010:62).

Table 6 shows two words for 'back' in Hamar, namely *zuló* and *buudó.* When trying to get the consultant to color these parts, he repeatedly stated that they are the same. However, when not being asked for it, he almost always used the word *zuló* to denote the body part 'back'. As Chapters 3 and 4 will cover, *zuló* and *buudó* are used differently in their extended function. This suggests that the two terms actually have slightly different meanings.

As in many cultures, Hamar people also know circumcision (Lydall and Strecker 1979:21; Brüderlin 2012:37). According to the consultant, circumcision of women does not occur anymore, but circumcision of men does. This is expressed as *samá taxaɗá* 'a penis that has been cut' (also see Lydall and Strecker 1979:21; 179).

2.1.4   Other Internal Parts

Table 7 includes terms for internal parts of the body that have not been mentioned so far, especially organs in the abdomen of the body:

Table 7. **Other internal body parts in Hamar.**

Hamar	Gloss	Translation	Notes
Simplex			
mɛské	'brain'	'brain'	
háama	'jugular.vein'	'jugular vein'	
leefí	'bone'	'bone'	
gíini	'vein'	'vein'	Also used for 'tendon'
woilám	'heart'	'heart'	
sómpo	'lung'	'lung'	
tiraɓó	'liver'	'liver'	
áka	'stomach'	'stomach'	Probably including the esophagus
lánt'i	'spleen'	'spleen'	
ɲúqurti	'small.intestine'	'small intestine'	
ɲomólto	'big.intestine'	'big intestine'	
ɓúlt'a	'kidney'	'kidney'	
t'áqale	'rectum'	'rectum'	
dɔ́ya	'bone.marrow'	'bone marrow'	
zomɓí	'blood'	'blood'	
Complex			
wongóro-sa t'ínsha	'pelvic.bones-GEN soft.tissue'	'soft tissue in the pelvis'	Meaning not sure

As Table 7 shows, most internal body part terms are simplex forms, apparently not clearly related to each other. Whereas in languages like Dutch there is a term *darm* 'intestine', with taxonomic parts like *dikke darm* 'big intestine', *dunne darm* 'small intestine' and *endeldarm* 'rectum', Hamar has different forms for all of these and not an overarching term. The *ɲúgurti* 'small intestine' is sometimes used by people in Hamar to 'read' the future or to perform magic.

Petrollino (2016:297) analyses *áka* 'stomach' as 'large intestine' and does not include *ɲomólto* in her grammar. However, my consultant described the process of food going from *áka* to *ɲúqurti* and from *ɲúqurti* to *ɲomólto*, in which *áka* is the place the food goes to once one has eaten it. I therefore choose the analysis of *áka* as 'stomach' and *ɲomólto* as 'large intestine'.

2.1.5 Strategies for Forming Complex Body Part Terms

Tables 4-7 displayed a number of complex body part terms, in which more than one noun is used to denote a body part. Within the data, several strategies are used to form complex body part terms. This subsection describes these different strategies. Section 2.2.2 discusses the use and meaning of juxtaposition and the genitive case marker *-sa.*

First, there are complex body part terms from which parts cannot occur independently. Examples include *qáami c'ánc'eme* '(ear) temporal.bone', *núki zoozí* '(nose) nasal.bone' and *áan(-sa) c'ɛʔɛ́* 'hand(-GEN) hand.palm', of which the forms *c'ánc'eme, zoozí* and *c'ɛʔɛ́* do not occur independently in my data.

Second, body part terms with a generic use, like *síiti* 'hair', *leefí* 'bone' and *gíini* 'vein/tendon', are combined with other body parts to denote a specific body part in a BODY PART NOUN 1 + BODY PART NOUN 2 construction, for example *bóoshi síiti* 'chin hair > beard' and *qɔ́c'a leefí* 'neck bone > clavicle'.

A third strategy to form complex body part terms is the combination of a common Hamar noun and a body part term. These common nouns include *kerí* 'door', *óolo* 'hole' and *bakí* 'bifurcation', in which instances such as example (5) occur:

(5)   *tudí-sa*   *bakí*
               buttock-GEN   bifurcation
               'anal cleft'

In example (5), the construction BODY PART NOUN-GEN COMMON NOUN occurs, in which COMMON NOUN is a part of BODY PART NOUN. It remains to be seen to what extent items that are now analyzed as 'generic body part terms' are used in a non-bodily way within the language. An example of this is *áan-sa káanta* 'arm/hand-GEN joint > wrist'. *Káanta* 'joint' can be combined with several other body part terms to convey a certain 'connection'. It is, however, not clear whether *káanta* 'joint' is a body part term or rather a common noun in Hamar.

Fourth, there are instances in which complex body part terms were sometimes rendered as simplex body part terms. *Zíiga leefí* 'spine bone > spine', for example, also occurred in the simplex form *zíiga.* It may be the case that the reduced forms are specifically used in discourse. A slightly different category in which body part terms occurred both as simplex and complex is that of BODY PART NOUN 1-GEN BODY PART NOUN 2 constructions such as *táana-sa qáwa* 'heel-GEN Achilles.tendon' and *áan-sa sílqa* 'arm/hand-GEN finger'. In these cases, a partonomic relation seems to be conveyed (see Section 2.3). Although this happened regularly, it may be due to the elicitation context.

Finally, there is one specific case of the construction BODY PART NOUN 1-GEN BODY PART NOUN 2, namely *amí-sa aafó* 'breast-GEN mouth > nipple'. In this case, *aafó* 'mouth' is used in an extended sense (see Section 3.3).

2.2 Grammatical Features of Body Part Terms

In this section, some of the grammatical features of body part terms in Hamar are discussed.

2.2.1 Body Part Nouns and Gender

Nouns in Hamar can inflect for masculine, feminine or plural form (see Section 1.2.2). This is also the case for body part nouns. Given that body part nouns are inanimate, masculine or feminine

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gender on body part nouns does not indicate inherent gender, but rather size, number or a pragmatic function such as constituent prominence or focus (Petrollino 2016:79; 163).

In citation form, body part nouns have the basic form, as any noun in Hamar. In context, body part nouns usually get inflected for gender and number. Some examples are given in (6a-c):

(6) a. *wórqɛ*   *aantâ-sa*   *sílqa-n-dar*   *ki-dáa-de*
           ring.M   arm/hand.M-GEN   finger.F.OBL-ALL   3-exist-PFV
           'the ring is on the finger of the hand' (TRPS:10)

    b. *shaashɛ́*   *ɛ́ɛ-sa*   *meté-n-dar*   *ki-dáa-de*
           headband.M   person.M-GEN   head-F.OBL-ALL   3-exist-PFV
           'the headband is on the head of the man' (TRPS:46)

    c. *kurínc'a-sa*   *tunɗó*   *sɛɛné-ɗan*   *ko-láz-e*
           honey.ant-GEN   buttock.F stone.M-ACC   3SG.F-touch-PRES
           'the buttock of the honey ant touches the stone'

In example (6a), the body part noun *aan* 'arm/hand' is in the masculine form, probably because the speaker refers to a specific arm/hand. A possible interpretation that the masculine form *aantâ* denotes a 'smaller arm', thus indicating 'hand', must be rejected, given that *aantâ* also occurs in instances in which the arm as a whole is meant.

The nasal -N- 'F.OBL' in (6b) is the replacement of a feminine suffix in forms that are not the subject of a sentence. It assimilates to the following case marker. This feminine nasal occurs very often in body part term constructions (see Section 4.4). Feminine gender is the Hamar default strategy to encode definiteness (Petrollino 2016:162). The feminine form in these constructions therefore not always explicitly refers to size or number.

Example (6c) is not about a human buttock, but about the buttock of an animal. However, this may be an example of how gender can convey size. The abdomens/buttocks of these animals are relatively big compared to the rest of their body, probably because of the honey being stored there. This is visible in the feminine form *tunɗó*, in which metathesis has taken place (*tuɗí > *tuɗnó > tunɗó*).

All in all, one could say that Hamar body part nouns act like other inanimate nouns with regard to gender.

2.2.2   Body Part Nouns and Possessive Constructions

As Section 2.1 showed, complex body part terms often consist of two words that form a unity. Throughout the data, two constructions for expressing part-whole relations appear, namely juxtaposition and a genitival relation, indicated by the case marker *-sa.* In some cases, both options occurred, which is indicated with brackets in Tables 4-7.

When studying the categories mentioned in Section 2.1.5, there seems to be a relation between the type of nouns used in the complex terms and the way in which the two nouns in the complex terms are linked. Forms like *qáami c'ánc'eme* '(ear) temporal.bone > temporal bone' and *bóoshi síiti* 'chin hair > beard', in which two body part nouns are used, almost always occur in juxtaposition, i.e. the compound construction BODY PART NOUN 1 + BODY PART NOUN 2 is used. An exception is *áan-sa gushó* 'arm/hand-GEN nail > finger nail'.

Items such as *tudí-sa óolo* 'buttock-GEN hole > anus', in which a common Hamar noun is possessed by a body part, very often occur in the genitive construction BODY PART NOUN-GEN COMMON NOUN. An exception to this is *áafi kerí* 'eye door > face'.

There are also items in which an alternation occurs. Examples are *kárc'a leefí* 'cheekbone', also attested as *kárc'a-sa leefí*, and *núki-sa óolo* 'nose-GEN hole > nostril', attested by Petrollino (2016:196) as *núki óolo* 'nose hole'. A corpus with more speakers of Hamar could shed more light on these alternations.

When studying these categories, one could say that in the compound forms, N2 usually displays a closer relationship to N1 than in the genitive forms. In the former case, both N1 and N2 are body part nouns. Common nouns in Hamar are probably seen as not having an inherent relation to body parts, which generates the use of a genitive construction (Ameka 1996:791). In a sense, the compound forms show a higher degree of inalienability, whereas the forms using a genitive construction are more alienable. Note that the genitive also occurs in 'partonomic constructions' (see Section 2.3).

2.2.3   Body Part Nouns and Verbs

Since Chapter 4 deals with grammaticalization but is mostly concerned with spatial relations, I want to point out another aspect of body part terms in Hamar. Some Hamar verbs are related to body part nouns, in which it is not always clear if forms are derived from one another (and if so, in which order), or if certain roots can be used in both nouns and verbs. The form *áafi* 'eye' has a verbal counterpart *aafá* 'to see'. *Áan(-sa) c'ɛʔɛ́* 'arm/hand(-GEN) hand.palm' can be related to *c'aʔá* 'to clap', *dúmai* 'thumb/big toe' to the verb *dumá* 'to grab' (Petrollino 2016:93) and the body part term *sómpo* 'lung' has been attested in context in the form *sompadídine*, which denotes that someone has tuberculosis. Additionally, some forms for bodily 'products' have a corresponding verb denoting the act of producing them, e.g. *pusó* 'fart' – *pusá* 'to fart', *pii* 'feces' – *piá* 'to defecate' and *shaan* 'urine' – *shandá* 'to urinate', in which the latter form is a passive.

However, most of the sensory verbs do not seem to be related to a body part term, given pairs such as *núki* 'nose' – *gaamá* 'to smell', *aan* 'arm/hand' – *lazá* 'to touch' and *qáami* 'ear' – *qansá* 'to hear, listen', although the latter verb may be related to the noun by means of using the causative affix -s and the nasal assimilating to this.

2.3 Organizing Principles

Brown (1976) and other authors argue that human body part terms are in a partonomy in which one *parton* is part of another *parton* to a maximum depth of six layers (Brown 1976:404).[4] This principle is said to be universal. The means to uncover this in a language may be looking for expressions like 'the arm is part of the body'. Research over time has shown that different languages have different ways of encoding these types of relationships, ways which sometimes cannot even really be called 'partonomic' (Enfield, Majid and Van Staden 2006b:144-145).

As has been shown before, *zará* and sometimes *bíshi* mean 'body' in Hamar. However, I have not encountered a Hamar lexical expression for 'part' or 'piece'. The only somewhat similar form

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[4] 'Partonomy' is concerned with 'part of' relationships, whereas 'taxonomy' is about 'kind of' or 'type of' relationships (Schladt 1997:56-57).

is *aimát ~ aimét* 'kind of', but this is an Amharic form which is used in a more taxonomic way, like 'a kind of stranger' or 'a type of thing'.[5]

When words like 'part' or 'piece' are not available, there may be other strategies to use, such as looking for an expression like 'the arm's hand exists' (Enfield 2006:156). According to Brown (1976:401), partonomy is described in terms of a *parton* being 'possessed by' an entity in a language. Possession may be more salient in terms of establishing relations between body parts, given that a part-whole concept may just not be elicitable or used at all in a language (Swanson and Witkowksi 1977:323). However, not all possessive relationships are also partonomic relationships (Enfield et al. 2006b:144). Although 'my book' or 'the name of the rose' are two examples of possessive relations, neither of them is partonomic in nature. A 'possessive construction' in linguistics may semantically not just describe possession, but may have multiple meanings or just convey an association between two forms (Aikhenvald 2013:2; Enfield et al. 2006b:144).

Examples (7a-c) display Hamar body parts related to each other in a genitive construction:

(7) a. *áafi   kerí-sa   núki*
         eye   door-GEN   nose
         'nose of the face'

     b. *áan-sa   gutúm*
         arm/hand-GEN   upper.arm
         'upper arm of the arm'

     c. *zoolé-sa   múrda*
         lower.leg.M-GEN   calf
         'calf of the lower leg'

In example (7a-c), the possessive construction BODY PART NOUN 1-GEN BODY PART NOUN 2 is used to relate one body part to another. A similar construction in Hamar also occurs in other instances of part-whole relationships, such as 'the roof of the house' (Petrollino 2016:195). One could thus argue that Hamar uses this possessive construction to convey partonomy, something that other African languages do as well (see for example Schladt [1997:63]).

The question is whether examples like (7a-c) really convey partonomy or rather a more generic relationship between the two body parts. The genitive construction in Hamar can also denote other relations, such as ownership and a kinship relationship (Petrollino 2016:195).

There are arguments for both sides of the hypothesis. Example (7a) is about the relation between the nose and the face. An alternative like **meté-sa núki* 'nose of the head' was unacceptable. Also unacceptable were forms like **meté-sa wɔtí* 'forehead of the head', **meté-sa áafi* 'eye of the head' and **meté-sa kárc'a* 'cheek of the head'. Conversely, **áafi kerí-sa qáami* 'ear of the face' was incorrect, whereas *meté-sa qáami* 'ear of the head' was accepted. This shows that, even if spatial contiguity is a factor in the acceptance of these forms, it is not the only criterion. On the basis of these relations with *áafi kerí* and *meté*, one may argue that BODY PART NOUN 1-GEN BODY PART NOUN 2 conveys partonomy. It also shows a certain hierarchy within

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[5] Recently, Petrollino (2020) encountered an analysis of the Hamar term *dánta* 'appearance, behaviour, way of being' as 'type, kind'. Even if *dánta* is indeed used as such, it still seems to be a taxonomic form.

the partonomy, since forms like *meté* 'head' and *áafi kerí* 'face' seem to be on a higher level than forms like *wɔtí* 'forehead' and *núki* 'nose'.

However, defending the hypothesis that BODY PART NOUN 1-GEN BODY PART NOUN 2 conveys partonomy becomes harder when examining examples (7b) and (7c). In example (7b), *áan-sa gutúm* 'upper arm of the arm' was judged to be acceptable, but so was *zará-sa gutúm* 'upper arm of the body'. This is similar for *múrda* 'calf' in (7c), which is here connected to *zoolí* 'lower leg', but *róo-sa múrda* 'calf of the leg/foot' was also accepted. Given that *múrda* 'calf' is part of *zoolí* 'lower leg' and *zoolí* 'lower leg' is part of *roo* 'leg/foot', the fact that *múrda* 'calf' can also be part of *roo* 'leg/foot' shows transitivity: A is part of B, B is part of C, but A is also part of C. This is usually not considered possible in partonomic relations (McClure 1975:79).

Another reason to dismiss the partonomy hypothesis is the fact that one body part can be ascribed to different body parts that are not necessarily related to each other. For *láshfa* 'shoulder blade', *gutúm-sa láshfa* 'shoulder blade of the upper arm', *áan-sa láshfa* 'shoulder blade of the arm/hand' and *zuló-sa láshfa* 'shoulder blade of the back' have been encountered. Note that **géle-sa láshfa* 'shoulder blade of the shoulder' is not correct. *Gutúm* 'upper arm' may be part of *aan* 'arm/hand' (7b), but I have not encountered it as being part of *zuló* 'back'. The transitivity principle thus does not always hold.

The results which the speaker judged to be 'incorrect' may tell the most in trying to establish a partonomy. These incorrect results include **zará-sa múrda* 'calf of the body', **sadá-sa woilám* 'heart of the chest', **zará-sa zoolí* 'lower leg of the body' and **zará-sa izáq* 'front neck of the body'. There are also cases in which the use of *zará* 'body' was said to be possible, but in which the consultant preferred another body part term, such as *áafi kerí-sa wɔtí* 'forehead of the face' over *?zará-sa wɔtí* 'forehead of the body', *áafi kerí-sa áafi* 'eye of the face' over *?zará-sa áafi* 'eye of the body' and *róo-sa buqó* 'knee of the leg/foot' over *?zará-sa buqó* 'knee of the body'. These examples show that there are probably some partonomic layers within Hamar. However, given all of the results in the data, it is hard to establish a coherent overview of body part partonomy for Hamar. This is because it is not clear whether the construction BODY PART NOUN 1-GEN BODY PART NOUN 2 conveys a partonomic relationship or rather provides information on connectedness, spatial contiguity or something else.

2.4 Summary

In this chapter, I presented body part labels for Hamar, in which both simplex and complex forms were identified. Some body part terms were highlighted, including *aafó* 'mouth', *aan* 'arm/hand' and *roo* 'leg/foot'. Several strategies for complex forms were discussed, such as using two body part nouns and the use of a common Hamar noun. Complex body part terms using the genitive construction BODY PART NOUN 1-GEN COMMON NOUN may display a higher degree of alienability than terms in the BODY PART NOUN 1 + BODY PART NOUN 2 construction. Body part terms were identified as nouns and they behave as such with regard to gender. Some Hamar verbs can be related to body part nouns. With regard to partonomy, the construction BODY PART NOUN 1-GEN BODY PART NOUN 2 was discussed. Although in some cases this construction conveys a partonomic relation, it cannot be used to design a body part partonomy for Hamar, given that there may be other motivations, such as spatial contiguity, underlying the use of this construction.

3. Body Part Mapping

The remainder of this thesis explores how body part terms are used in other parts of the Hamar language. This chapter deals with the way body part terms are mapped onto objects.

Some people will call this 'metaphoric transfer' (Kraska-Szlenk 2014:16), defining it as a process in which a source (e.g. a body part) and a target (e.g. an object) do not have the same referent, in which two different domains of experience are involved, in which there is no such thing as a comparison statement ('X is like Y') and in which the literal meaning of the expression is false (Heine 1997:139). Others will say that this chapter is just concerned with 'analogy', since metaphor comprises a transfer from a concrete to an abstract domain (Lakoff and Johnson 1980:105).

In some instances, terms like *amí* 'breast' and *aafó* 'mouth' are mapped one-to-one onto particular parts of objects. It may also occur that a featured object, e.g. a car, as a whole is conceptualized as a human or an animal. Following the analogy, parts of a human or animal are mapped onto the object.

Section 3.1 of this chapter discusses the labeling of animal body parts. Section 3.2 focuses on the way in which Hamar uses the anthropomorphic model and the zoomorphic model. Section 3.3 elaborates on how body part terms are mapped onto objects, looking for processes underlying the extended use of body part terms.

3.1 Animal Body Part Terms

Although many animal body parts can be described in terms of the human body (Enfield 2006:157), a language can also have animal-specific terms that are not based on the human body (Wierzbicka 1980:84). Table 8 shows specific animal body part terms and two human body part terms from Hamar that seem to have a different meaning for animals:

Table 8. Animal body part terms in Hamar.

Hamar	Gloss	Translation	Notes
Simplex			
qoshúmba	'horn'	'horn'	
shúqumba	'hoof'	'hoof'	
labá	'front.leg'	'front leg'	
alís	'dewlap'	'dewlap'	
dubána	'tail'	'tail'	
donqál	'animal.hump'	'hump'	
qaqá	'teat'	'teat'	
kafána	'wing(s)'	'wing(s)'	
silé	'feather'	'feather'	
poogó	'baboon.buttock'	'baboon buttock'	
póoto	'scales'	'scales'	
qándi	'udder'	'udder'	Found as 'groin' for humans
qoosí	'animal.penis'	'animal penis'	Found as 'elbow' for humans
Complex			
barjó shúqumba	'god hoof'	'dewclaw'	

Table 8 shows that the human body part terms *qánɗi* 'groin' and *qoosí* 'elbow' seem to have a different use for animals. *Qánɗi* 'groin' for animals occurs for the udder of a cow and *qoosí* 'elbow' occurs for the penis area of male quadrupeds, such as cows or hartebeests. Petrollino (2016:299; 328) mentions *bánzi* 'bull's penis', which has not been offered to me, perhaps due to dialectal variation.

The body part term 'breast' is often expected for 'udder' or 'teat', even though it may be argued that 'udder' and 'breast' cannot exactly be considered counterparts, given that "breasts are definable in terms of mere appearance, [whereas] 'udder' seems to necessarily refer to 'milk'" (Wierzbicka 1980:86). As it turns out, *amí* for 'teat' in Hamar is possible, although *qaqá* was said to be better Hamar. The 'teat' of the female baboon is labeled similar to the human breast, *gaitóno-sa amí* 'breast of the female baboon'.

Concerning the complex form *barjó shúqumba* 'god hoof > dewclaw', one may probably expect some specific meaning, given the use of the salient term *barjó* 'god, good fortune' (see Strecker [1988] for more on *barjó*). However, I have not been able to find such a meaning.

The body of animals is denoted as *zará* in Hamar, similar to humans. *Qúuro* 'hide' is used for animals (see Section 2.1), but only when an animal is not covered by hair. There are also specific terms in Hamar like *éebi* 'cow's hide, leather' and *aizí* 'goat's hide'. These terms were mostly attested in contexts in which the objects were made into an animal product or used as such.

Hamar uses a reasonable amount of human body part terms for animals. *Wɔtí* 'forehead', for example, is used for humans as well as animals. The actual range of *wɔtí* 'forehead' differs per animal. The *wɔtí* 'forehead' of a cow ranges until the nostrils, whereas for the baboon, *wɔtí* 'forehead' denotes the part above the eyes and below the haired head, barely visible. Animals also have *zuló* 'back' and *ii* 'belly'. In the case of quadrupeds, *zuló* is the higher half of their 'torso', whereas *ii* is the lower part. *Tudí* 'buttock' also occurs for animals, with the exception of the specific pink buttock of the baboon, which is *poogó.*

Labá 'front leg' is used for the front legs of quadrupeds like cows, goats, hyenas and hartebeests. Given that the term 'quadruped' refers to an animal walking on four feet, one could expect an equal treatment of these four legs. However, there are more languages that distinguish between the front legs and back legs of quadrupeds. The Papuan language Yélî Dnye labels the front legs of quadrupeds such as pigs, dogs, reptiles and cuscuses as *kóó* 'arm/hand', the back legs as *kpââlî* 'upper leg' (Levinson 2006:232).

The Hamar consultant saw a parallel between *labá* 'front leg' and *aan* 'arm/hand'. He stated several times that *labá* is like *aan*. A digit of *panáq-sa labá* 'front leg of the frog' was denoted as *labá-sa sílqa* 'finger of the front leg'. He judged *labá-sa súrki 'toe of the front leg' to be incorrect.

It is possible to have an alternation within one animal between *labá* 'front leg' and *aan* 'arm/hand'. The front legs of the frog, for example, were rendered both as *panáq-sa labá* 'front leg of the frog' and *panáqa-sa aantâ* 'arm/hand of the frog'. The same alternation occurred for *gayá* 'baboon'. For a picture of a baboon sitting with his buttock on the ground, the front legs of this animal were called *gaitâ-sa aan* 'arm/hand of the male baboon', although *labá* would also be possible. However, when a picture of a baboon walking on four feet was shown, the front legs were called *gaitâ-sa labá* 'front leg of the male baboon'.

For animals like cows and goats, only *labá* 'front leg' occurs, not *aan* 'arm/hand'*.* The legs of bipeds, e.g. birds, are labeled as *roo* 'leg/foot', similar to the back legs of quadrupeds.

3.2 The Anthropomorphic Model and the Zoomorphic Model

The body is an important conceptual source for deictic and object-deictic orientation, together with landmarks and some dynamic concepts (Heine 1997:38). Deictic orientation uses the perspective of the speaker, in which notions such as 'up', 'down' and 'in' occur. The use of body part terms in deictic orientation often includes a process of metaphoric transfer and grammaticalization (see Chapter 4). Object-deictic orientation, on the other hand, has to do with 'the intrinsic frame of reference' (Heine 1997:11), in which the object, rather than the speaker, is the deictic center. Body parts are mapped onto the object by means of analogy.

The human body can be a model or source from which body part terms are transferred to other objects. This is known as the anthropomorphic model. One may also use the animal body. In this case, one employs the zoomorphic model, also known as the 'pastoralist model' (Svorou 1994:74). Figure 3a-b illustrates the differences between the two models. Note that these models apply to both deictic and object-deictic orientation:
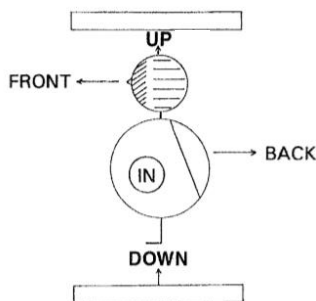

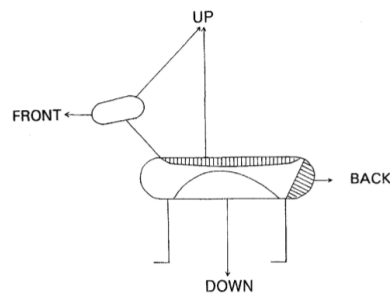**Figure 3a.** An example of the anthropomorphic model (Heine 1997:48).

Figure 3b. An example of the zoomorphic model (Heine 1997:41).

Figure 3a-b shows that the body part term 'back' can denote something like 'back' when the anthropomorphic model is used, whereas it may mean 'top' when the zoomorphic model is used. The same is true for 'head', which may mean 'front' in the zoomorphic model in addition to 'top'. Another example is 'belly', which denotes 'downside' or 'bottom' in the zoomorphic model whereas 'inside' is the usual anthropomorphic use. The anthropomorphic model in particular can differ slightly per language, Figure 3a is a common example.

It may be the case that languages combine the anthropomorphic model and the zoomorphic model. The head, ribs and belly, for example, may be used in an anthropomorphic way to denote 'front', 'side' and 'inside', whereas the buttock denotes 'back' in the zoomorphic way (Svorou 1994:75). The zoomorphic model is never found to be used on its own. If it is used, the language will also use the anthropomorphic model (Heine 1997:40).

This section discusses two cases in which Hamar shows variation in the use of the anthropomorphic model and the zoomorphic model, namely the 'top' of an object and the 'back' of an object.

3.2.1 'Top': the Head and the Back

As Figure 3a-b suggests, the head may be used as a source to convey the concept of 'top'. *Meté* 'head' is indeed used as such in Hamar.[6] Instances in which this occurs are mountains, trees and houses, as Figure 4a-c shows:
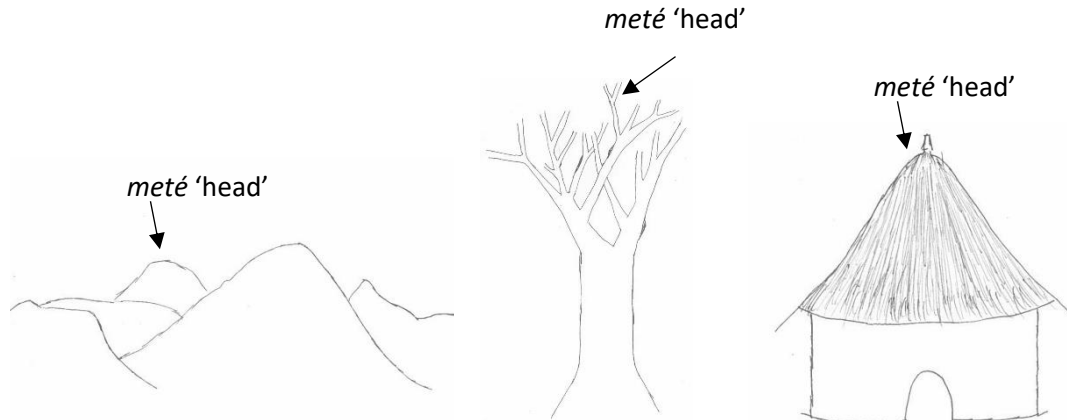

Figure 4a-c. The *meté* 'head' of a tree, mountain and house in Hamar.

The top of the objects in Figure 4a-c is denoted as *meté* 'head'. Note that the very top of, for example, the house in Figure 4c is *ílle* 'crown', whereas *meté* 'head' is the part next to the sharp pointer. The same use of *(meté) ílle* 'crown' applies to a mountain and a tree, although *háqa-sa meté* 'head of the tree' was preferred over *háqa-sa meté íllɛ* 'head crown of the tree', probably due to the type of tree that was shown.[7] Note that the genitive case marker *-sa* in the COMMON NOUN-GEN BODY PART NOUN construction is also used in genitive relations to describe a part of a person, e.g. *walé-sa rɔɔtâ* 'Walé's leg/foot' (Petrollino 2016:195).

On the basis of Figure 3a-b, the zoomorphic way to denote 'top' would be to use the term for 'back'. This is what occurs for *zuló* 'back', which can be seen in, for example, the extension on four-wheeled motor vehicles, as Figure 5a-b shows:
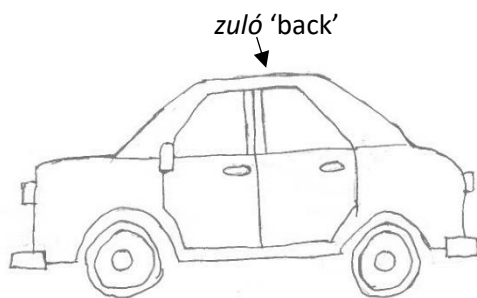
Figure 5a. The *zuló* 'back' of a car in Hamar.
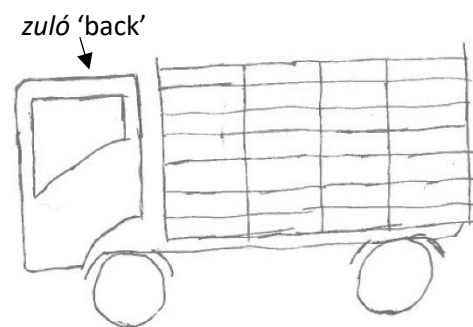
Figure 5b. The *zuló* 'back' of a truck in Hamar.

In Figure 5a and Figure 5b, *zuló* 'back' denotes the top of the car and the top of the cabin of the truck respectively. Note that the overall shape of the car and truck shares features with an animal and that different body parts will be mapped onto these objects accordingly. However,

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[6] In the zoomorphic model, *meté* 'head' can denote the front. Although it does not occur a lot in the data, I have found some instances of a zoomorphic application of *meté* 'head'. The cabin of the truck in Figure 5b, for example, was attested as such, given that the inside of this cabin was described as *metín-sa íino* 'belly of the head'.

[7] 'Crown' or 'apex' can be expressed by *ílle*, but usually, the complex form *meté ílle* 'head crown' is used.

an object does not have to (abstractly) resemble an animal to have *zuló* 'back > top' as a part of it. It also occurs for the seat of a stool and for a tree stump, the latter of which is shown in Figure 6:
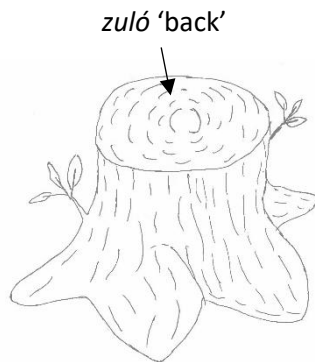
zuló 'back'

Figure 6. The *zuló* 'back' of a tree stump in Hamar.

When comparing Figure 5a-b and Figure 6 to Figure 3b, it becomes clear that *zuló* 'back' denotes the top of something in a zoomorphic way and that Hamar has two ways to denote the concept of 'top', using either *meté* 'head' or *zuló* 'back'. The zoomorphic interpretations of *zuló* 'back' have in common that they apply to a horizontal plane. This horizontal orientation is similar to that of the back of a quadruped, such as a cow. Since *zuló* 'back' occurs for both the human and the animal back, it is unclear whether the use of *zuló* in denoting 'up' or 'top' actually specifically refers to an animal back (cf. Svorou 1994:73). A similar use of 'back' in other languages has also been explained by arguing that the load-carrier function of the human back is used in denoting, for example, the top of a tree stump (Pasch 2019:85). This means that a zoomorphic analogy would not necessarily underlie this use. Since load carrying in Hamar is both done by animals and humans, I stick to the zoomorphic explanation, particularly because *zuló* 'back' is specifically used in a horizontal orientation and because of the animal > car mapping in Figure 5a-b.

Consequently, *meté* 'head' and *zuló* 'back' are not interchangeable, i.e. *meté* 'head' and *zuló* 'back' do not denote the top of the same object. The items in Figure 4a and 4c also have parts that were analyzed as *zuló* 'back', as Figure 7a-b shows:
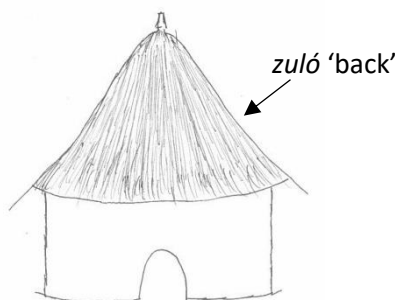
zuló 'back'

zuló 'back'

Figure 7a. The *zuló* 'back' of a house in Hamar.   Figure 7b. The *zuló* 'back' of a mountain in Hamar.

As Figure 7a-b shows, it is a slope-like part of an object that is denoted as the *zuló* 'back' of that particular object. Sometimes this part was also described as *deemí* 'side'. At one point, the consultant, while describing from a picture the location of a tree on a mountain, stated that *deemí* 'side' was a bit lower on the slope. If the tree would have been a bit higher up, it would have been at the *zuló* 'back'. Note that this may be a choice from this particular speaker.

Hamar also has a word for roof, *yééla*, which implicates that one cannot directly translate *zuló* 'back' in Figure 8a as 'roof'. Rather, the two forms interact, as example (8) below shows. The type of Hamar house described in this example consists of a cylinder-like 'base', on which a roof is placed afterwards:

(8)   *wosí*   *ooní-n-sa*   *zuló-n-dar*   *yééla-n*   *wod-ídi-ne*
                  1PL   house-F.OBL-GEN   back-F.OBL-ALL   roof-F.OBL put-PF-COP
                  'we put the roof on top of the house (lit.: on the back of the house)'

In example (8), the top of the roofless house is analyzed as *zuló* 'back'. It may be that in this example, *zuló* is used in both object-deictic orientation and deictic orientation, i.e. that the use of *zuló* 'back' does not only denote a part of the house but also the notion of 'on top of', but this does not change the fact that *zuló* 'back' is used rather than, for example, *meté* 'head'. Note that without a roof as shown in Figure 7a, the shape of the house is somewhat similar to the stump in Figure 6. When showing a drawing of a spider on the ceiling of a (western) house to the consultant (TRPS:07), he also described it as being *oonínsa zulóndar* (see example (8)).

There seems to be a separate word for 'slope' in Hamar as well, *ásho*. I have only found this form in relation to elevations in the landscape. However, *gúrma-sa zuló* 'back of the hill' and *gúrma-sa ásho* 'slope of the hill' probably do not convey the same thing, given that *zuló* may refer to a particular part of the slope.

Languages that have different terms for the animal back and the human back may give rise to different models, in which the term for the human back acts in an anthropomorphic way, whereas the term for the animal back functions in a zoomorphic way (Brugman 1983; Svorou 1994:75). The question is whether *zuló* 'back' actually functions in both models, i.e. whether it expresses both 'top' and 'back'. Even though Figures 7a-b show a diagonal rather than a horizontal orientation, one cannot really say that it expresses the 'back' of the mountain or the 'back' of the house in my data. Rather, the horizontal plane is tilted to a more diagonal orientation. Objects like birds can still be on it, as well as on the flat tops of Figure 5a-b and 6. I would therefore argue that the *zuló* 'back' is mainly mapped onto objects in a zoomorphic way, whereas *meté* 'head' displays anthropomorphic use. The next section explores the anthropomorphic use of another 'back' term, *buudó*.

3.2.2 'Back': the Back and the Buttock

Another difference between the anthropomorphic model and the zoomorphic model is the way in which the backside of objects is expressed. Figure 3a-b showed that body part mapping according to the anthropomorphic model uses a body part term like 'back' for this, whereas the zoomorphic model prefers 'buttock'. In Hamar, the body part *buudó* 'back' can denote the back of something. The other 'back' term, *zuló,* rather denotes a flat (horizontal) surface (see Section 3.2.1).

Both *buudó* 'back' and *tudí* 'buttock' are used to denote the backside of objects. *Buudó* 'back' was used to describe the back of a house, as example (9) shows:

(9)   *ooní-n-sa*   *buudó-m-bar*   *ki-woyá-de*
                  house-F.OBL-GEN   back-F.OBL-AD 3-stand-PFV
                  'he stands at the back of the house'

In example (9), which was elicited by putting a plastic human figure behind a paper house, it becomes clear that 'the back of the house' (as opposed to the front or the side) is denoted as *buudó* 'back'. Even though example (9) may also be both object-deictic and deictic oriented (see the explanation of example (8)), it still illustrates the point that in the data, *buudó* 'back' occurs in a vertical orientation.

The back of a car is conceptualized in the zoomorphic model as the buttock of an animal, in which case an example like *isúzun-sa tudí* 'buttock of the Isuzu car' occurs. From my data, one can draw the tentative conclusion that the choice for the anthropomorphic or the zoomorphic model is based on shape or space (see Section 3.3). *Buudó* 'back' as part of a house can be analyzed as something vertical, similar to the human back, whereas *tudí* 'buttock' is applied in a zoomorphic way in instances in which there is a protruding part at the back, usually in a horizontally elongated (featured) object that may as a whole be analyzed as similar to an animal (also see Section 4.3).

Using *buudó* 'back' to denote the back of something also occurs in describing some parts of the body in a spatial way. The brains were said to be located at a space described as *metí-sa buudó* 'back of the head'. *Áan-sa buudó* 'back of the hand' was used to denote what is in English also called 'back of the hand'. In this case, *áan-sa zuló* 'back of the hand' was given as well, which may be due to the fact that a hand can be either flat or up.

3.3 Processes Underlying Body Part Mapping

As has already been shown in Section 3.2, body part terms in Hamar are not just used to denote body parts of humans and animals, but also parts of objects. As stated before, body part terms may be transferred one-to-one to parts of objects (Kraska-Szlenk 2014:16). A part of an object is conceptualized as a certain body part because of a specific feature, whereas other parts are not analyzed in terms of the human body. In other words, these objects are not perceived as bodies or persons, but they rather use a selection of body parts (Pasch 2020:68). It may also be that a whole featured object is conceptualized as a human or animal, such as in Figure 5a-b, and that body part mapping draws from this conceptualization.

In this section, the mapping from body part terms onto inanimate objects will be discussed. A non-exhaustive overview of Hamar body part extensions per body part term, based on one feature that might activate the analogy, is given in Table 9:[8]

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[8] Note that one body part term may actually have extensions in different categories, which may not be displayed in Table 9.

Table 9. Hamar body part mapping onto inanimate objects.

Hamar Term	English Gloss	Extended Use
Shape/ Appearance		
amí	'breast'	*háqa-sa amí* 'breast of the tree' > 'tree knot'
		bótɛ-sa amí 'breast of the pumpkin' > 'pumpkin stalk'
ɗánga	'uvula'	*háqata-sa ɗánga* 'uvula of the tree' > 'twig of the tree'
		qálbe-sa ɗánga 'uvula of the leaf' > 'bud of the leaf'
gigerí	'molar teeth'	'part that joins the beam and blade of a plough' (Petrollino 2016:304).[9]
gulɗánt'i	'belly button'	*murá-sa gulɗánt'i* 'belly button of the gun' > 'gun safety'
izáq	'throat'	*murá-sa izáq* 'throat of the gun' > 'gun barrel'
qúnɗe	'clitoris'	*murá-sa qúnɗe* 'clitoris of the gun' > 'sight of the gun'
Space/Position		
kárna	'pelvis'	*murá-sa kárna* 'pelvis of the gun' > 'gun handle'
táana	'heel'	*murá-sa táana* 'heel of the gun' > 'gun stock'
meté	'head'	*isúzun-sa metɛ́* 'head of the Isuzu' > 'cabin of the Isuzu truck'
		háqata-sa metɛ́ 'head of the tree' > 'top of the tree'
qɔ́c'a	'neck'	*kánkin-sa qɔ́c'ano* 'neck of the car' > 'back part of the cabin of the car'
tuɗí	'buttock'	*isúzun-sa tuɗí* 'buttock of the Isuzu' > 'back of the Isuzu car'
wɔtí	'forehead'	*kánkin-sa wɔtíno* 'forehead of the car' > 'front of the car'
(meté) ílle	'crown'	*ooní-sa ílle* 'crown of the house' > 'top of the house'
		ɗúka-sa metɛ́ íllɛ '(head) crown of the mountain' > 'tip of the mountain'
		háqata-sa metɛ́ íllɛ '(head) crown of the tree' > 'top of the tree'
qáami	'ear'	*ɗáa-sa qáami* 'ear of the pot' > 'handle of the pot'
		bíiri-sa qáami 'ear of the stick' > 'tip of a three-pronged stirring stick'
Function		
aafó	'mouth'	*murá-sa aafó* 'mouth of the gun' > 'gun muzzle'
		díski-sa aafó 'mouth of the pot' > 'opening of the pot'
		shárqa-sa aafó 'mouth of the calabash' > 'part of the calabash from which you drink'
ii	'belly'	*kánkin-sa íino* 'belly of the car' > 'inside of the car'
		metín-sa íino 'belly of the head' > 'inside of the cabin'
		díski-sa ii 'belly of the pot' > 'inside of the pot'
		shárqa-sa ii 'belly of the calabash' > 'inside of the calabash'

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[9] The actual combination with the word for 'plough' was not attested, only the use of *gigerí* in describing a part of it.

Table 9 (continued). **Hamar body part mapping onto inanimate objects.**

Hamar Term	English Gloss	Extended Use
Combination		
áafi	'eye'	*kánki-sa áafino* 'eye of the car' > 'car light'
		háqata-sa áafi 'eye of the tree' > 'fruit type'
roo	'leg/foot'	*kánkin-sa róono* 'legs/feet of the car' > 'car wheels'
		bórkoto-sa roo bakí 'bifurcated leg/feet of the stool' > 'stool leg'
zoolí	'lower leg'	*háqa-sa zoolí* 'lower leg of the tree' > 'trunk of the tree'
		qálbe-sa zoolí 'lower leg of the leaf' > 'midrib of the leaf'
		shuɗé-sa zoolé 'lower leg of the blade of grass' > 'grass culm'
zuló	'back'[10]	*ɗúka-sa zuló* 'back of the mountain' > 'mountain slope'
		oonín-sa zulóno 'back of the house' > 'lower part of the roof'
		bórkoto zuló 'back of stool' > 'seat of the stool'
		metín-sa zuló 'back of the head' > 'top of the truck cabin'
		shárqa-sa zuló 'back of the calabash' > 'top of the (upside down) calabash'

As can be seen in Table 9, which is just an illustration of the possibilities, there are very different body parts mapped onto objects, even those that could be considered 'marginal', such as *guldánt'i* 'belly button' or *qúnɗe* 'clitoris'. Almost all body part extensions occur in a COMMON NOUN-GEN BODY PART NOUN construction, sometimes with gender marking on the common noun or the body part noun. This gender marking does not play an important role in these body part term extensions and will be ignored.

Table 9 shows that there are several reasons for speakers to choose a particular body part term to denote a part of an object. Levinson (1994) describes similar possibilities for speakers of Tzeltal (Maya), e.g. the possibility to associate a form like 'nose' with 'a small protuberance' via the human nose, or to associate it with 'leading point' via the animal nose (Levinson 1994:809).[11]

In Table 9, extensions of body parts are analyzed as being based on shape/appearance, space/position, function or a combination of these three categories. These categories partly overlap with Heine, who distinguishes transfer on the basis of shape, space or a combination of the two (Heine 1997:137-138). He also mentions 'size' (Heine 1997:139).

Body part extensions based on 'shape/appearance' are examples like *murá-sa qúnɗe* 'clitoris of the gun > sight of the gun'. Depending on the particular type, a gun may have a sight that in some way resembles the human clitoris. The same explanation could be given for *háqa-sa amí* 'breast of the tree > tree knot', in which the shape and protuberance resembles the protuberance of a human breast.

Extensions based on 'space/position' are those like *ooní-sa ílle* 'crown of the house > top of the house' and *murá-sa táana* 'heel of the gun > gun stock'. The consultant pointed out that *táana* 'heel' is used because of the position of the gun when standing on the ground.

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[10] Recall from Section 3.2.1 that *zuló* 'back' is mostly used in the zoomorphic model, thus expressing mapping based on the animal body.

[11] Levinson eventually casts serious doubts on the idea of these extensions being 'metaphorical'. He argues that there seems to be a more coherent algorithmic logic behind them rather than just a 'loose analogy' (Levinson 1994:812).

Body part extensions based on 'function' are for example those with *aafó* 'mouth'. *Aafó* as part of an object has been encountered in the data quite often and is even used in body part nomenclature (*amí-sa aafó* 'mouth of the breast > nipple'). In most cases, *aafó* indicates an orifice, something like the 'gate of the body' by which things can go in and out.

In some cases, it is not clear which category it is that triggers the extension. An example of this is *kánki-sa áafino* 'eye of the car > car light'. One may argue that speakers base the extended use of the body part term *áafi* 'eye' on position and that it is part of the conceptualization of the whole car as an animal. This would be acceptable for the front part of the car, but not initially for the back part. Its round form may be seen as analogous to the round human eye, however, there are also car lights that are not particularly round, thus reducing transfer based on shape/appearance to the transfer of an abstract notion. Another option is to explain the extension of *áafi* 'eye' to 'car light' in terms of the function, namely 'seeing' or 'to make seeing possible'.

Another example is the extension of *zoolí* 'lower leg'. One may argue that it is the elongated shape that triggers the extension, such as in *shuɗé-sa zoolɛ́* 'lower leg of the blade of grass > grass culm'. In other cases, it may be the 'standing' or 'supporting' function of the lower leg, for example in *háqa-sa zoolí* 'lower leg of the tree > trunk of the tree'.

For *zuló* 'back', as discussed in Section 3.2.1, the extension can be based on space/position because of the animal > car analogy, but probably also on 'function' (being a carrier of an object). All in all, from analyzing the data, it becomes clear that there are several cognitive processes that trigger the mapping of body parts onto objects and that different processes can occur per body part term or intertwine for one extension.

A crucial point to take into consideration is that, although some of these body part term extensions have been affirmed by other data, others are based on only one speaker. Additional research is necessary to see whether these extensions are used throughout the whole Hamar community.

A question which is also relevant is to what extent the system of body part mapping onto objects is still productive. In Tzeltal, virtually any physical item can be described in terms of body parts (Heine 1997:137). For Hamar, I would not draw the same conclusion, given that some parts of objects have other names. In the future, it could even be the case that loans from languages like Amharic will replace body part terms in their extended use (see Chapter 1).

3.4 Summary

In this chapter, I have explored body part mapping in Hamar. Animal body parts can have labels different from human body parts, but in some cases, human body part terms are used to designate parts of animals, although some of these may be used differently. The term *labá* 'front leg' for quadrupeds is comparable to *aan* 'arm/hand' rather than *roo* 'leg/foot'. In mapping body parts onto objects, Hamar uses both the anthropomorphic model and the zoomorphic model. *Zuló* 'back' and *tuɗí* 'buttock' are mainly used in a zoomorphic way to respectively denote 'top' and 'back', whereas *meté* 'head' and *buudó* 'back' are anthropomorphic ways of doing so. A considerable amount of body part terms is used to denote parts of objects, usually in a COMMON NOUN-GEN BODY PART NOUN construction. Processes underlying these choices were analyzed as 'shape/appearance-based', 'space/position-based', 'function-based' or a combination of these.

4. The Grammaticalization of Body Part Terms

Whereas Chapter 3 dealt with the extension of body part terms in terms of analogy, the focus of this chapter is more on deictic orientation and metaphoric transfer. In Section 4.1, the grammaticalization of body part terms in African languages is explored, in order to provide a context for the discussion of Hamar. Section 4.2 deals with the expression of location and space in Hamar, especially regarding case markers and the elevation deictics *baa* 'up' and *coo* 'down'. Section 4.3 provides an overview of the way Hamar body part terms are used to denote space. In Section 4.4, I examine to what degree Hamar body part nouns are grammaticalized. Section 4.5 summarizes this chapter.

4.1 Body Part Terms Denoting Location in African Languages

The most common source used to denote concepts like ON, UNDER and BACK in African languages is the body. An overview of this use of body part terms is given in Table 10:[12]

Table 10. The use of body part terms for spatial concepts in 125 African languages (Heine et al. 1991:126). The numbers refer to the number of languages in which a certain body part appears for a certain spatial concept.

	Spatial Concept				
Body Part	ON	UNDER	IN	FRONT	BACK
Head	40			6	
Back	2				80
Face	2			47	
Shoulder	2				
Buttock/anus		22			22
Foot		4			1
Belly/stomach			58		
Heart			2		
Eye				14	
Forehead				8	
Mouth				6	
Breast				6	
Chest				2	
Palm of hand			3		

Table 10 shows that there is variation in the body part terms used for certain concepts, but also that each spatial concept is denoted by one preferred body part term: 'head' for ON, 'buttock/anus' for UNDER, 'belly/stomach' for IN, 'face' for FRONT (although 'eye' also occurs multiple times) and 'back' for BACK with 'buttock/anus' as a second option, probably due to the zoomorphic model that some languages use (see Section 3.2).

Body part terms are usually nouns. When such body part nouns are used in a more abstract way, they often belong to a category called 'locational nouns' or they may have developed into an adposition.[13] A locational noun can be defined as "a noun denoting a fragment of space" (Pawlak 1986:4). Heine et al. (1991:143) categorize these locational nouns as 'noun-based

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[12] Forms in small capitals indicate the (abstract) notion of a spatial concept, rather than a concrete noun or adposition. Note that in Table 10, Heine et al. conflate object-deictic and deictic orientation, i.e. it is not specified whether 'head' is used to describe the upper surface of an object, or the region related to it, and whether additionally morphology is used to express the latter.

[13] Alternative labels for locational nouns are 'locative nouns' and 'spatial nouns', among others.

adpositions' or 'N-adpositions', opposed to 'V-adpositions', which describe concepts like PLACE, GOAL and PATH (Heine et al. 1991:140). European languages express both notions in portmanteau adpositions such as 'on' and 'at' (Heine et al. 1991:144). Nouns and verbs are both a common source for adpositions in languages of the world (Hagège 2010:8).

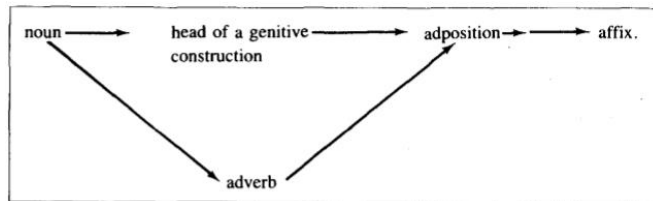Nouns developing into adpositions often follow the structure displayed in Figure 8:

Figure 8. **The development from noun to adposition (Heine et al. 1991:132).**

Figure 8 shows that there is an intermediary stage between 'noun' and 'adposition'. A locational noun may thus develop into an adposition by means of heading a genitive construction or being an adverb. This process is called 'grammaticalization' (Hopper and Traugott 1993).

Examples (10)-(13) below show utterances from different African languages, in which different body part terms are used to denote a spatial relation. As will be explained afterwards, the degree of grammaticalization differs:

(10)　　　*gíbù*　　　　　*t'úúm-kǹ*　　　　**gǝ́ri-tà**
　　　　　cloud　　　　　mountain-DAT　　**head-LOC**
　　　　　'the cloud is above the mountain'
　　　　　(Sheko, Omotic (Afro-Asiatic); [Hellental 2010:265])

(11)　　　*baati*　　　　　*i*　　　　*daandú*　　　*do'*
　　　　　iron:sheet　　　s.3　　　**back.M.CON**　house
　　　　　'the iron sheet is on top of the house'
　　　　　(Iraqw, Cushitic (Afro-Asiatic); [Carlin and Mous 1995:124])

(12)　　　*mǝ̀sí*　　　*pâ*　　　*tǝ̀*　　　*ntùù*　　*ndáp*
　　　　　bird　　　　is　　　　tǝ̀　　　**heart**　　house
　　　　　'the bird is inside the house'
　　　　　(Shupamem, Grassfields Bantu (Niger-Congo); [Nchare and Terzi 2014:677])

(13)　　　*ɛ̄*　　　　*rāg*　　　*fɔ́l*　　　*mūū*
　　　　　3SG.NOM　stop　　　hole　　**before (< *mūū* 'face')**
　　　　　'he stopped in front of the hole'
　　　　　(Gaahmg, Eastern Sudanic (Nilo-Saharan); [Stirtz 2014:41])

The example of Sheko (10), an Omotic language like Hamar, shows that body part nouns can be combined with a locational case marker to form a locational noun. In (10), *t'úúm* 'mountain' is the dependant in an adpositional construction. Since case marking usually applies to nouns, *gǝ̀ri* 'head' still shows a certain degree of nominalism, but the locational noun cannot, for example, get an accusative case marker.

The Iraqw example (11) displays a particular genitive construction (cf. Figure 8), with body part nouns being used in a construct state. This construct state is always used when body part nouns denote location and differs from the 'dictionary form' of the noun (Carlin and Mous 1995:123).

Syntactic criteria that distinguish nouns from adpositions include the question whether a form can function as a direct argument of a verb (nouns can, adpositions cannot) and whether a form can be modified (nouns can, adpositions cannot). In the Shupamem example (12), modifying *ntùʼ* 'heart' would result into an ungrammatical expression (Nchare and Terzi 2014:679). This body part noun has therefore lost some of its nominal properties.

In the Gaahmg example (13), the body part term *mūū* 'face' seems identical to the postpositional form *mūū* 'before'. However, Stirtz analyses the postposition as being homophonous to the body part noun, rather than being the same. This can be explained by another Gaahmg example in (14) below:

(14)   *ɛ̄*   *rāg*   *fɔ́l*   **áán̪**
         3SG.NOM   stop   hole   **behind (< āā-n̪ '1.GEN-back')**
         'he stopped in back of the hole'
         (Gaahmg, Eastern Sudanic (Nilo-Saharan); [Stirtz 2014:45])

Example (14) shows several reasons to analyze the Gaahmg body part noun as being different from the postposition. First, different tones occur, given that the body part noun *āān̪* 'my back' has a mid-tone, whereas the postposition *áán̪* 'behind' uses a high tone. Second, there is the issue of possession. Body parts in Gaahmg are inalienably possessed and some of them are inherently possessed, i.e. this subset must have an explicit person marker (Stirtz 2014:44). However, the person marker on the postposition is fossilized and does not refer to an actual person anymore. In (14), there is no reference to a first person, even though the first person marker occurs. Postpositions derived from body part nouns occur with one specific fossilized person marker, which differs per body part (Stirtz 2014:45). Locational body part nouns in Gaahmg have thus developed into distinct grammatical elements.

The examples above show how body part terms can behave when they are somewhere on the continuum between 'noun' and 'adposition'. Section 4.4 ties this section and the following two together in exploring to what degree Hamar body part nouns have been grammaticalized when denoting spatial relations.

4.2 Denoting Space in Hamar

Spatial relations in Hamar can be denoted by body part terms, but case markers and elevation deictics, which are discussed in this section, do so as well. They may interact with body part terms in Hamar utterances.

4.2.1 Locational Case Markers

Contrary to some other languages in Africa, Hamar has a case system that goes beyond marking core cases. There are up to seven cases that mark locations or referents, both static and dynamic (Petrollino 2016:191). Table 11 provides an overview:

Table 11. **Hamar (locational) case markers, partly based on Petrollino (2016:115; 185).**

Case (Gloss)	Suffix	Rough English Translation	Static/Dynamic
General locative (LOC)	*-te*	'in'	static
Adessive (AD)	*-bar*	'close to'	static
Allative (ALL)[14]	*-dar*	'to(wards)'; 'on'	dynamic; static
Inessive (IN)	*-r*	'in(side)'	dynamic
Ablative (ABL)	*-rra*	'(away) from'	dynamic
Perlative (PER)	*-rɔ́xa*	'through'	dynamic
Affective (AFF)	*-kal ~ -xal*	'affected'	static
Instrumental (INS)	*-ka ~ -xa*	'with', 'through'	dynamic

The affective case was attested in describing location and the instrumental case may also be used in a perlative way, which is why both are included in Table 11.

In my data, *-te* 'LOC' and *-dar* 'ALL' can have a similar use, although *-dar* 'ALL' elsewhere in the language functions as a proper allative. Both *-te* 'LOC' and *-dar* 'ALL', as well as *-bar* 'AD', are used with static verbs. Body part nouns like *zuló* 'back' and *metí* 'head' do not occur with *-te* 'LOC', rather with *-dar* 'ALL'. On the other hand, body part nouns like *buudó* 'back', *tudí* 'buttock' and *wɔtí* 'forehead' (see Section 4.3) virtually never occur with *-dar* 'ALL'. This may show a preferred orientation, in which *-dar* 'ALL' indicates a vertical spatial relation, whereas *-te* 'LOC' displays a horizontal relation.

Examples (15a-d) illustrate the use of some of the case markers from Table 11:

(15) a. *gúrdo*   *haamí-n-te*   *ki=woyá-de*
         elephant.tree   field-F.OBL-LOC   3=stand-PFV
         'the elephant tree stands in the field'

      b. *záanɛ*   *hátta*   *durúma-dar*   *ki=qordá-de*
         rope.M   tree.M   dry.log-ALL   3=circle.around.PASS-PFV
         'the rope is circled around the dry tree log' (PSPV:36)

      c. *panáqa*   *noqó-rra*   *utá-ise*   *shudé-sa*   *zoolé-dar*
         frog   water-ABL   go.out-CNV   grass.M-GEN   lower.leg.M-ALL
         ki=woyá-de
         3=stand-PFV
         'the frog goes out of the water and stands on the blade of grass'

      d. *náasa*   *líkka*   *ooní-n-sa*   *keré-xal*   *ki=woyá-de*
         child.M   small   house-F.OBL-GEN   door.M-AFF   3=stand-PFV
         'the boy stands close to the door of the house'

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[14] Petrollino (2016:185; 193) distinguishes between a specific allative *-dar* and a general allative *-shet*. I have not encountered *-shet* in my data.

In (15a-d), case markers indicate the relation between the Figure and the Ground.[15] In example (15a), the general locative case marker -*te* is used. Recall that in Table 10, the spatial concept IN was given as a domain for which body part terms are often used. Hamar may do so as well (see Section 4.3), but example (15a) shows that it is not obligatory. Usually, in a language using both case markers and adpositions, the former express more abstract relations, whereas the latter express more concrete ones (Hagège 2010:38). Example (15c) shows how body part nouns can get a case marker in order to denote a spatial relation.

4.2.2 Elevation Deictics

One subgroup of locational deictics in Hamar is the group of so-called 'elevation deictics', which can be analyzed as adverbs (Petrollino 2016:113). These forms denote the position of the Ground relative to the speaker on a vertical axis. They are given in Table 12:

Table 12. Elevation deictics in Hamar.

Elevation Deictic	Rough English Translation
ɓaa	'up'
saa	'there' (same level)
coo	'down'

Examples (16a-c) show the use of these deictics:

(16) a. | *pólo* | *dúka-sa* | *ɓaa* | *birá-n-te* | *ki=dáa-de* |
|---|---|---|---|---|
| cloud | mountain-GEN | up | first-F.OBL-LOC | 3=exist-PFV |

'the cloud is above the mountain' (TRPS:36)

b. | *sáa* | *ɛ́ɛ* | *shúpo-n-te* | *dorq-â* | *ímba-ne* |
|---|---|---|---|---|
| SLEV | person.M | shadow-F.OBL-LOC | sit-REL.PAST.M | 1POSS.father-COP |

'the man who sits over there in the shadow is my father' (Petrollino 2016:116)[16]

c. | *gunnó* | *cóo-bar* | *wóngin-sa* | *labá-l* | *bakí-n-ka* |
|---|---|---|---|---|
| snake.F | down-AD | cow.F-GEN | front.leg-INCL | bifurcation-F.OBL-INS |
| *yáʔa-te* | *ko=dáa-de* | | | |
| go-SE | 3F.SG=exist-PFV | | | |

'the big snake is going under the cow between the front legs'

In (16a-c), the elevation deictics convey a spatial relation between two entities. The elevation deictic *saa* (16b), denoting that something is on the same level, has not been attested in interaction with body part nouns and will not be discussed here.

According to Petrollino, if the elevation deictics modify a noun phrase, they usually precede it (2016:113). Most of the examples in my own data, with (16c) as an exception, used the construction COMMON NOUN-GEN ELEVATION DEICTIC(-LOCATIONAL CASE MARKER) (BODY PART) NOUN-F.OBL-LOCATIONAL CASE MARKER, in which the elevation deictic intervenes in the genitive construction.

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[15] The terms Figure and Ground can be defined as follows. The 'Figure' is a moving or conceptually moveable object of which the orientation, path or side is considered the variable. The 'Ground' is a reference entity with a stationary setting. The orientation, path or side of the figure is described compared to the ground (Talmy 2000:312).

[16] I have slightly altered these glosses.

The elevation deictics can both be used as bare forms or with either static or dynamic locational case markers. Whether bare forms express static or dynamic motion depends on the verb they modify (Petrollino 2016:115). Note that the meaning of *baa* and *coo* in Hamar is relative rather than absolute, based on the speaker's location at the time of speaking. One place, for example a particular village, may at a certain point be *baa* 'up', whereas it is *coo* 'down' at another time.

The forms *baa* 'up' and *coo* 'down' can be related to the spatial concepts ON and UNDER. There are instances in which both an elevation deictic and a body part term are used to denote the same concept. Examples (17a-b) show the interaction of body part terms with *baa* 'up':

(17) a. *áttɛ*   *háqata-sa*   *ɓaa*   *metí-n-dar*   *ki=dáa-de*
          bird.M   tree.M-GEN   up   head-F.OBL-ALL   3=exist-PFV
          'the bird is up on the top of the tree'

     b. *ɛɛ*   *ooní-n-sa*   *ɓaa*   *zuló-n-dar*   *yáya-te*   *ki=dáa-de*
          person.M   house-F.OBL-GEN   up   back-F.OBL-ALL   walk-SE   3=exist-PFV
          'the man is walking on top of the house' (TRPS:34)

In examples (17a-b), the elevation deictic *baa* 'up' interacts with the body part terms denoting ON as discussed in Section 3.2.1.

Contrary to ON, there is no particular body part term in Hamar that is used to denote UNDER. In the data, usually *coo* 'down' denotes the direction of UNDER, combined with a body part term to indicate the object, such as *ii* 'belly'. (18) is an example expressing 'under':

(18)   *náasa*   *kankɛ́-sa*   *cóo-bar*   *íi-n-te*   *ki=wodá-de*
          child.M   car.M-GEN   down-AD   belly-F.OBL-LOC   3=lie.down-PFV
          'the boy lies under the inside of the car'

In example (18), a plastic boy was put under a plastic car while the boy was facing the bottom of the car, in this case a region anchored to the inside (*ii* 'belly') of the car. This is why *ii* 'belly' in this example is related to UNDER. If he, for instance, had been under a table, another body part term would probably have been used instead (cf. example (16c)).

Note that even though *baa* 'up' and *coo* 'down' are related to ON and UNDER, they do not exactly convey the same thing. Example (19) illustrates this:

(19)   *oonnó*   *háqata-sa*   *cóo-bar*   *deemí-n-te*   *ko=woyá-de*
          house.F   tree.M-GEN   down-AD   side-F.OBL-LOC   3F.SG=stand-PFV
          'the big house stands lower at the side of the tree' (TRPS:49)

In example (19), one cannot say that *cóo-bar* 'down-AD' should be interpreted as meaning 'under'. In this example, elicited by using a picture, *coo* 'down' denotes that from the perspective of the speaker, the tree is higher and the house, which is behind the tree, is lower. The use of *deemí* 'side' will be discussed in the following sections.

4.3 The Expression of Spatial Relations

In order to summarize which terms are used in Hamar spatial grams to express spatial relations, Table 13a-b provides an overview:[17]

Table 13a. **The use of body part terms in Hamar spatial relations.**

Spatial Region	Body Part Term	Gloss	In Spatial Grams
TOP-REGION	*meté*	'head'	'upper surface of an object'
	zuló	'back'	'upper surface of a flat object'
BACK-REGION	*buudó*	'back'	'back of an object'
	tudí	'buttock'	'back of a horizontally elongated object'
FRONT-REGION	*wɔtí*	'forehead'	'front of an object'
INSIDE-REGION	*ii*	'belly'	'inside of an object'
SIDE-REGION	*deemí*	'side'	'side of an object'

Table 13b. **The use of other terms in Hamar spatial relations.**

Spatial Region	Hamar Term	Gloss	In Spatial Grams
TOP-REGION	*ɓaa*	'up'	
BOTTOM-REGION	*coo*	'down'	
FRONT-REGION	*birá*	'first'	'front'
SIDE-REGION	*t'eezí*	'near, next to'	

The body part terms mentioned in Table 13a usually appear as locational nouns in the (COMMON NOUN-GEN) BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER construction. Note that this genitive construction compares well to Figure 8. Recall that the feminine inflection is the 'default' for definite nouns.

From Table 13a-b, the TOP-REGION and BOTTOM-REGION have extensively been discussed before. Regarding the BACK-REGION, Petrollino (2016:121) states that both *buudó* 'back' and *tudí* 'buttock' combined with a static locational case marker can be used to denote the spatial relation 'behind' or 'at the back (of)', in which *buudó* 'back' is used when the Figure and the Ground are not in contact with each other. Example (20) illustrates the use of *tudí* in denoting a BACK-REGION:

(20) *yaatâ*   *yáan-sa*   *tudí-m-bar*   *ki=dáa-de*
sheep.M   sheep.F.OBL-GEN   buttock-F.OBL-AD   3=exist-PFV
'the male sheep is behind the female sheep' (Petrollino 2016:121)

In example (20), *tudí* 'buttock' is used to express 'behind'. In my data, a similar expression can also be used when animals are not touching. If actual touching was involved, the consultant sometimes used *-kal ~ -xal* 'AFF' on the head of the genitive construction. The ideophone *lash* 'touch.IDEO' was used as well. Based on my data, I rather take the approach that 'shape/appearance' or 'space/position' determines whether something is *buudó* 'back' or *tudí* 'buttock' (see Section 3.2.2).

Additionally, *buudó* 'back' was used for objects which had a part labeled as *tudí* 'buttock'. In one of the elicitation situations, the consultant put a plastic boy at the point where the back and

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[17] Spatial grams are "grammatical forms of language which express primarily spatial relations" (Svorou 1994:31).

the side of the car connect, in order for him to indicate the location of *buudó* 'back'. Figure 9 illustrates this use of *buudó*:
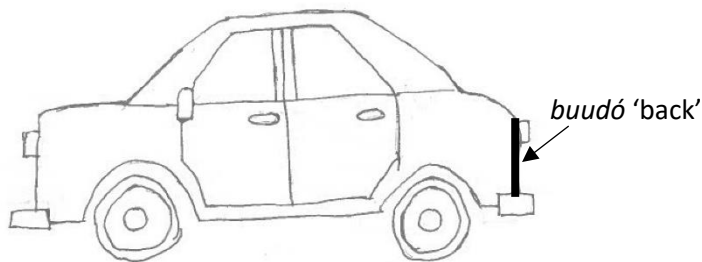

Figure 9. The *buudó* 'back' of a car in Hamar.

A description similar to Figure 9 was given for a plastic sheep when the consultant put it at the *buudó* 'back' of a cow, i.e. at the intersection of the side and the buttock of the cow. An explanation for this could be that the speaker preferred something vertical for *buudó* 'back' (see Section 3.2.2). He probably interpreted this particular vertical line within the cow or the car as similar to the human back because of the vertical orientation, even though it is not in human proportions or at a place easily interpretable as the human back.

The FRONT-REGION can be expressed in two ways, either by the body part term *wɔtí* 'forehead' or by the form *birá* 'first'. *Birá* is used as the ordinal counterpart of the cardinal number *kála* 'one', for example in an enumeration. *Birá* can also be used in contrast to *tudí* 'buttock' to express the first and the last item of a row, e.g. *qúlta birá* 'the first goat' as opposed to *qúlta tudé* 'the last goat', or to denote the front and the back of an (horizontally elongated) object such as a cut-down tree. In example (16a), *birá* 'first' was used in a vertical orientation.

Examples (21a-b) show the use of *birá* 'first' in expressing the FRONT-REGION and its similarity to the use of *wɔtí* 'forehead':

(21)	a.	*yééta*	*wongín-sa*	*birá-n-te*	*ki=woyá-de*
		sheep.M	cow.F-GEN	first-F.OBL-LOC	3=stand-PFV
		'the sheep stands in front of the cow'			

	b.	*yééta*	*wongín-sa*	*wɔtí-n-te*	*ki=woyá-de*
		sheep.M	cow.F-GEN	forehead-F.OBL-LOC	3=stand-PFV
		'the sheep stands in front of the cow'			

Example (21a-b) shows that both *birá* 'first' and *wɔtí* 'forehead' can be used to denote the FRONT-REGION. Apparently, it does not make a difference whether the object of which the FRONT is denoted has an inherent *wɔtí* 'forehead'. Cows in Hamar are said to have a forehead and *birá* 'first' in example (21a) is grammatical, although it may be that *birá* 'first' points to the order of the objects rather than the spatial region.

For the INSIDE-REGION, one form has been attested, which is *ii* 'belly'. This form is used in many cases, as will be discussed in the next section.

For the SIDE-REGION, the body part term *deemí* 'side' is employed. This form is often used to indicate a relation between Figure and Ground on a vertical or diagonal plane. In expressions of location, an object may or may not touch the actual side of the Ground, i.e. in some cases the English translation should be 'at/on the side of', whereas in other cases, it should be 'next to'.

The notion of 'next to', 'near' or 'close to' can also be expressed by the form *t'eezí*, although *t'eezí* primarily expresses the proximity of two objects, rather than the actual spatial relation.

As will be shown in the next section, *deemí* 'side' can also indicate what can be analyzed as 'front' or 'back' from the speaker's perspective. Figure 10 illustrates an example:

Figure 10. Cassava tubers in front of a tree stump (PSPV:65).

In Figure 10, the cassava tubers that were put slant in front of a tree stump were described as being at the *deemí* 'side' of it.

When comparing Table 13a to Table 10, one can see that Hamar partly follows the majority patterns as they occur in African languages. For ON and IN, Hamar employs the often used 'head' (*meté*) and 'belly' (*ii*), although 'back' (*zuló*) is also frequently used for ON in Hamar. For BACK, the language uses both 'back' (*buudó*) and 'buttock' *(tuɗí)*, two strategies employed in other African languages as well. The use of 'forehead' (*wɔtí*) to denote FRONT is not an obvious choice, but neither is it unique. For UNDER, Hamar does not use one particular body part term, but as it appears from Table 10, this is not uncommon, given that only 26 of the 125 languages in the sample use a body part term at all here. Something that does not become clear from Table 10 is the extent to which other languages use more than one body part term to denote one spatial concept or to what extent one body part term can be used for two different spatial concepts.

4.4 The Degree of Grammaticalization of Hamar Body Part Terms

As can be concluded from this thesis thus far, Hamar body part nouns participate in the process of grammaticalization. Heine et al. (1991:130) distinguish four stages in this grammaticalization process:

0) The body part noun is a body part of X.
1) The body part noun is a subpart of X, spatially defined.
2) The body part noun is used in denoting space as part of and adjacent to X.
3) The body part noun is used in denoting space adjacent to X.

Obviously, all body part nouns discussed in Chapter 2 can be found in Stage 0. The body part terms discussed in Section 3.3 can be put in Stage 1, in which the reason for being a 'subpart of X' depends on the category of body part mapping. When it comes to Stage 2, the body part terms from Table 13a are involved. This also shows that the different stages overlap, i.e. one body part noun can occur in different stages in the language. Stage 2 as formulated above retains the possibility to interpret one item as ambiguously being used to denote 'part of X' or 'adjacent to X'. This ambiguous state is the bridging context between the nominal use and the adpositional use of a body part noun (also see Heine et al. 1991:66-67). Examples (22a-b) illustrate this:

(22) a. *náasa*   *wongín-sa*   *zuló-n-dar*   *ki=dorqá-de*
child.M   cow.F-GEN   back-F.OBL-ALL   3=sit-PFV
'the boy sits on the back of the cow'

b. *náasa*   *ooní-n-sa*   *íi-n-te*   *ki=dáa-de*
child.M   house-F.OBL-GEN   belly-F.OBL-LOC   3=exit-PFV
'the boy is inside the house'

Example (22a) seems to be an example in which *zuló* 'back' should be interpreted as meaning 'back', rather than the more abstract 'on top of'. However, the latter is not impossible. The same can be said for example (22b); one may as well interpret this sentence as 'the boy is in the belly of the house' in which *ii* 'belly' is used as a subpart of *ooní* 'house'.

Another example in which it seems to be unclear whether a subpart of X or space adjacent to X is meant, is (23):

(23) *agálo*   *ooní-n-sa*   *buudó-n-ka*   *wɔtí-n-ka*   *c'ir*
fence   house-F.OBL-GEN   back-F.OBL-INS   forehead-F.OBL-INS   round.IDEO
ko=woisá-ɗa-de
3F.SG=put-PASS-PFV
'the fence was put around the (forehead and back of the) house'

Example (23) describes how the fence goes around the front and the back of the house. The question is whether *wɔtí* 'forehead' and *buudó* 'back' denote (sub)parts of *ooní* 'house' or whether they denote space adjacent to it, even though grammatically, subparts of the house are denoted. A similar example came up when trying to see whether a tree had a *wɔtí* 'forehead'. The consultant stated that *wɔtí* 'forehead' and *buudó* 'back' can only be used in relation to the tree when the tree has a clear shadow. The part having shadow is called *wɔtí,* the other part is called *buudó.* The shadow moves from *wɔtí* to *buudó.* If no shadow is visible, the consultant said that any part of the trunk is *deemí* 'side', in which the position of the speaker or a person standing somewhere near the tree is not taken into account. This seems to implicate that *wɔtí* and *buudó* are not so much an inherent part of the tree, but that the speaker projects them either onto the tree or onto the space adjacent to the tree.

A case in which the relation to an object X becomes more abstract is in the use of *ii* 'belly'. The data show that *ii* 'belly' is used in cases in which it may be unlikely that 'belly' as part of an actual object is meant, such as in examples (24a-c):

(24) a. *meté-sa*   *mɛské*   *íi-n-te*   *ki=dáa-de*
head-GEN   brains   belly-F.OBL-LOC   3=exist-PFV
'the brains of the head are at the inside'

b. *oonnó*   *dellí-n-sa*   *íi-n-te*   *ko=dáa-de*
house.F   enclosure-F.OBL-GEN   belly-F.OBL-LOC   3SG.F=exist=PFV
'the house is inside the enclosure' (TRPS:15)

c. *dattóno*   *doobí-n-sa*   *íi-n-ka*   *gob-idí*
animal.F   rain-F.OBL-GEN   belly-F.OBL-INS   run-PF
'the animal ran through (the inside of) the rain' (Petrollino 2016:121)

In these examples, there is no object which can be analyzed as having something like a 'belly' as a subpart of it along with other subparts. However, (24a) and (24b) are about a space with actual sides, of which the inside is denoted as *ii* 'belly'. Example (24a) may be analyzed as an adverb (see Figure 8). In example (24c), these actual 'sides' are not present anymore. Although example (24c) is a dynamic situation, the combination *noqón-sa íinte* 'in the belly of the water' has also been attested (Petrollino 2016:117). Given that *íi-n-te* 'belly-F.OBL-LOC > inside', using a static locational case marker, also occurs with motion verbs like *ardá* 'to enter', one may want to argue that this particular form is somewhat grammaticalized (also see Petrollino 2016:120), but as example (24c) shows, there are other case markers which can be attached to *ii* as well to get a spatial reading.

One may also study other grammatical features of body part terms in locational expressions in order to see their degree of grammaticalization (see Section 4.1). All of the body part nouns mentioned in Table 13a can be and usually are combined with both static and dynamic case markers from Table 11 in locational expressions. On the one hand, this indicates that there are no clearly fossilized forms of (COMMON NOUN-GEN) BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER, but on the other hand, this is different from 'regular' COMMON NOUN 1-GEN COMMON NOUN 2(-ACC) constructions, in which no case marker or only a core case marker such as the accusative is used. Examples (25a-b) illustrate this difference:

(25) a. *í-sa*   *buudó-n-te*   *dorqá*
          1SG-GEN   back-F.OBL-LOC   sit.IMP.2SG
          'sit behind me!'

      b. *í-sa*   *buudó*   *qotá*
          1SG-GEN   back   scratch.IMP.2SG
          'scratch my back!'

In example (25a), a locational case marker is used, which turns the body part noun into a locational noun, whereas in example (25b), the use of *buudó* 'back' as a regular body part noun is shown. The pronoun in (25) functions similarly to a common noun. The obligatory use of a locational case marker in examples like (25a) implicates that locational body part nouns cannot be used as a subject or object of a verb, given that a subject or object is successively zero-marked or marked with the (optional) accusative case marker *-ɗan.* A (COMMON NOUN-GEN) BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER construction is never attested in subject or object position. This is a difference between 'regular' nouns, including nouns with an inherent notion of location such as 'house' (see Section 1.2.2), and locational body part nouns.

Another feature to examine is the sensitivity of body part nouns with regard to gender and number when being used with a locational case marker. Consider examples (26a), given before as (17a), and (26b):

(26) a. *áttɛ*   *háqata-sa*   *ɓáa*   *metí-n-dar*   *ki=dáa-de*
          bird.M   tree.M-GEN   up   head-F.OBL-ALL   3=exist-PFV
          'the bird is up on top of the tree'

      b. *áttɛ*   *háqata-sa*   *ɓáa*   *meté-xal*   *lash*   *ki=dorqá-de*
          bird.M   tree.M-GEN   up   head.M-AFF   touch.IDEO   3=sit-PFV
          'the bird is up touching the top of the tree'

Example (26) was given while describing one of the birds in Figure 11:

Figure 11. A bird high up in a tree.

The first response of the consultant to Figure 11 was the utterance displayed in (26a). However, when looking at Figure 11 again, he concluded that the bird was not exactly on the highest point of the tree, but close to it or 'touching it'. It seems therefore that in (26a), *metíndar* is used in a more abstract way meaning 'on top of', but that there still is a hint of a concrete 'head', which is expressed in (26b).

In example (26a), there is the regular -N- 'F.OBL' inflection (recall that the feminine inflections *-no* and *tóno* can only be used in subject position and that feminine inflection is the 'default' for definite nouns). Throughout the data, virtually the only form Stage 2 or 3 body part nouns have been attested in is BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER. Stage 1 or 2 body part nouns used masculine inflection a few times (e.g. example (15c)).

The gender of nouns in Hamar may already indicate adjectival notions like 'big' or 'small', even though there are separate adjectives for this. In the data, a few examples have been found in which a body part noun used in Stage 1 or 2 was modified, such as (27a-b):

(27) a. *háqata-sa*   *áafi-no*   *zuló-n*   *wúl-dar*   *ko=dáa-de*
          tree.M-GEN   eye-F   back-F.OBL   all-ALL   3SG.F=exist-PFV
          'the fruit is on all of the back [of the tree]' (TRPS:45)

      b. *ɗúka-sa*   *metɛ́*   *tunɛ́-ne*
          mountain-GEN   head.M   circle.shape-COP
          'the head of the mountain has a circle shape'

In example (27a), the body part noun *zuló* 'back' is modified by *wul* 'all, every', which also takes the allative case marker. In (27b), modification by means of a predicative adjective occurs. The fact that this is possible shows that for this stage, at least some nominal properties are retained. The lack of examples in which possible Stage 2 or 3 body part nouns are modified may be either due to the fact that this simply does not occur or due to the nature of the corpus.

In certain contexts, 'regular' body part nouns may look similar to body part nouns denoting a spatial relation, as can be illustrated by examples (28a-b):

(28) a. *kofía*   *ɛ́ɛ-sa*   *metí-n-dar*   *ki=dáa-de*
          hat   person.M-GEN   head-F.OBL-ALL   3=exist-PFV
          'the hat is on the head of the man' (TRPS:5)

b. *kofía*   *metí-n*   *innó-n-dar*   *ki=dáa-de*
   hat   head-F.OBL   1SG.F.POSS-F.OBL-ALL   3=exist-PFV
   'the hat is on my head'

In example (28a), it is likely that the actual body part 'head' is meant, but theoretically, it may also indicate 'on top of the man' (note that using *-te* 'LOC' was considered ungrammatical). However, example (28b) shows a modification of *metí* 'head', in which it becomes clear that *metí* 'head' in this case functions as a 'regular' body part noun.

All in all, body part nouns in Hamar appear in all four stages, although there are not many clear cases of Stage 3. As the data show, context plays the most important role in determining the degree of grammaticalization of body part nouns. Locational body part nouns (i.e. Stage 2 or 3 cases) virtually always appear in a COMMON NOUN-GEN BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER construction. Their sometimes ambiguous reading and the fact that some characteristics of regular nouns have been found to occur, whereas others have not been found to occur, show that these locational body part nouns in Hamar are somewhere on the continuum between nouns and adpositions.

4.5 Summary

This chapter examined the grammaticalization and spatial use of body part terms in Hamar. Section 4.1 gave an overview of body part terms in African languages, showing some instances in which body part nouns have grammaticalized to different degrees. In Section 4.2, locational case markers and elevation deictics were discussed in relation to body part nouns. The allative case marker *-dar* is also used to indicate vertical static spatial relations, whereas *-te* 'LOC' denotes horizontal spatial relations. The elevation deictics *ɓaa* 'up' and *coo* 'down' usually interact with body part terms in a COMMON NOUN-GEN ELEVATION DEICTIC(-LOCATIONAL CASE MARKER) BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER construction. In Section 4.3, an overview of body part terms in spatial grams was given, discussing among others the two ways of denoting the FRONT-REGION. The choice for certain body part terms was compared to other African languages. In Section 4.4, a four-stage model was used to examine the degree of grammaticalization of body part nouns. It was concluded that mainly semantic criteria rather than grammatical ones should be used to distinguish the different stages, but also that virtually all locational body part nouns are used in the form BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER, which is where they differ from 'regular' nouns.

5. Conclusion

The question to be answered in this thesis was: how are body parts used in the Hamar language? After some background information was given in Chapter 1, Chapter 2 explored the way in which body parts are labeled in Hamar. The distinction between *zará* 'body', *bíshi* 'skin' and *qúuro* 'hide' was shown and some body part terms were highlighted. It was argued that complex body part terms using a BODY PART NOUN-GEN COMMON NOUN construction display a higher degree of 'alienability' than complex body part terms using the BODY PART NOUN 1 + BODY PART NOUN 2 construction. A partonomy could not be established due to the multiple interpretations of the BODY PART NOUN 1-GEN BODY PART NOUN 2 construction.

Chapter 3 treated body part mapping. Some human body parts have different meanings when they designate animal body parts, such as *qosí* 'elbow, animal penis'. The term *labá* 'front leg' is in some cases interchangeable with *aan* 'arm/hand', but never with *roo* 'leg/foot'. Section 3.2 showed that the two words for 'back', *zuló* and *buudó*, function differently in extension, in which *zuló* 'back' behaves according to the zoomorphic model. It was hypothesized in Section 3.3 that shape/appearance, space/position, function or a combination of these are processes that trigger body part mapping onto objects.

Chapter 4 started with overview of locational body part nouns throughout Africa. Locational case markers and the elevation deictics, especially *baa* 'up' and *coo* 'down', were discussed as additional means of denoting spatial relations. In the data, *-dar* 'ALL' also indicates vertically oriented static spatial relations, whereas *-te* 'LOC' denotes horizontal static spatial relations. When the elevation deictics interact with body part nouns, a COMMON NOUN-GEN ELEVATION DEICTIC(-LOCATIONAL CASE MARKER) BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER construction usually occurs. Section 4.3 examined which body part terms are used in Hamar spatial grams. Section 4.4 used the four-stage model of Heine et al. (1991) to explore the degree of grammaticalization of body part terms in Hamar. It was shown that body part nouns appear in all four stages, although not often in clear cases of Stage 3. Locational body part nouns almost always occurred as BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER. It will usually be the context that indicates how to interpret such a construction. The genitive construction COMMON NOUN-GEN BODY PART NOUN-F.OBL-LOCATIONAL CASE MARKER fits into the grammaticalization model of Heine et al. (1991).

The main limitation of this thesis is the fact that most of the data are only from one speaker. This thesis should therefore be considered a preliminary exploration of body part terms in Hamar, rather than a representative description. Another limitation is the fact that the data come from elicitation, instead of being acquired in a natural setting and natural speech.

This thesis may serve as a blueprint for similar research on body part terms in Hamar with a corpus of more speakers. Additional areas for further research include the use of body parts in idiomatic expressions and the use of body parts in expressions of emotion and sensations.

Body parts are unmistakably related to who we are as human beings. Knowing how the body and its parts are viewed and used throughout the world does therefore not only add to the knowledge of certain languages, but also to the knowledge of human cognitive and linguistic capacities. This thesis, which has shown some of these processes for the Hamar language, is hopefully a small contribution to the big quest of how humans work.

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