Metaphor and Metonymy in Body Parts in some Amazigh Varieties: The Case of the 'Head' and its Parts

Mohamed Yeou
Université Chouaib Doukkali

Cet article analyse la variation sémantique dans 28 variétés amazighes parlées au Maroc, en Algérie, Tunisie, Libye, au nord du Mali, au Nord et à l'ouest du Niger, en Mauritanie et dans l'oasis de Siwa en Égypte. La variation sémantique est étudiée à travers l'analyse de la terminologie des parties du corps, à savoir la tête et certaines de ses parties. Les données proviennent de dictionnaires bilingues publiés où les équivalents des termes désignant la tête, les cheveux, le visage, le cou, les yeux, les oreilles et la bouche ont été relevés. Les résultats de cette étude démontrent clairement une présence significative de la variation sémantique dans les parlers amazighes. Cette variation est principalement basée sur des extensions sémantiques impliquant des configurations métaphoriques et métonymiques. Par ailleurs, cette étude confirme l'hypothèse selon laquelle les parties du corps ne conduisent pas nécessairement à l'émergence d'extensions sémantiques universelles bien qu'elles soient une source universelle pour la construction du sens.

1. Introduction

It is common knowledge that body parts terminology represents a productive source of lexical semantic extension (Wilkins 1996; Niemeier 2000; Hilpert 2007) as well as grammatical meaning (Heine et al 1991; Heine and Kuteva 2002), which makes them an interesting basis for cross-linguistic comparison.

A number of studies have already examined body part terms in Amazigh, the earliest being Laoust (1920) who gave all the body parts terms attested in the Amazigh variety of Ntifa and compared them with the corresponding terms in the other Amazigh varieties. However Laoust's research was rather a taxonomy of body terms and did not contain any semantic analysis. To my knowledge, there are only two main studies that investigated body parts terminology in Amazigh from a semantic point of view: Mrani (2007) in Tamazight and Talmenssour (2011) in Tashelhit. However, the two studies were limited to one individual Amazigh variety and focused on idiomatic expressions and proverbs but did not give cross-

dialectal comparisons. The studies also failed to portray the role of metaphor and metonymy in the construction of lexical and grammatical meaning.

The present paper purports to investigate semantic variation across Amazigh varieties through the case study of body-part terms, namely the head and some of its parts. The aims of the study are: (a) to explore how metonymy and metaphor are used in the semantic extensions of Amazigh body parts terms; and (b) to determine if the semantic extensions involving metonymy and metaphor are simple or serial. The novel contribution of this study is not only the cross-linguistic comparison but also the application of the cognitive linguistic approach.

The paper is structured as follows. First, metaphor and metonymy are defined from a cognitive linguistics perspective. Then some cross-linguistic studies on body-part terminology are reviewed. This is followed by the research methodology. Finally, the results of the data are reported and discussed.

2. Review of the literature

Before reviewing some studies on body-part terms, brief definitions of metaphor and metonymy are in order.

2.1. Metaphor and metonymy in cognitive linguistics

Metaphor involves conceiving or understanding a thing in terms of another different thing on the basis of a perceived similarity between them, i.e. between the source and the target (in cognitive linguistics terminology). Metaphoric meaning extensions are based on such similarity between the new referent and the old referent. For example, French *feuille* 'sheet of paper' came about from the metaphoric extension of the original meaning 'leaf (of plant)'.

Unlike metaphor, metonymy is not based on perceived similarity. The basis of metonymy is contiguity, which can be spatial, temporal or conceptual. Some instances of semantic extension due to metonymy are the following: (a) Spanish *paella* 'a special rice dish' originally denoted the pan in which it was prepared; (b) English *cheek* < Old English *cēace* 'jaw, jawbone'. A special type of metonymy is synecdoche, which involves part-to-whole relationships. An instance of this type of semantic extension is Spanish *boda* 'wedding' < Latin *vōta* 'marriage vows'

In cognitive linguistics metaphor and metonymy are treated as conceptual and cognitive processes rather than a mere substitution of one word for another. They are conceptual in the sense that they are part of our everyday way of thinking and are cognitive in that they help us to mentally access one conceptual entity (the target) via another entity (the source or vehicle) (Lakoff and Johnson 1980). The notion of domain plays an important role in distinguishing metaphor from

metonymy. Metaphor mapping involves two distinct frames of reference, while metonymic mapping occurs within the same frame of reference (Lakoff, 1987).

Although metaphor and metonymy are distinct conceptual phenomena, there are many ways in which they combine and interact in linguistic expression, as shown by Goosens (1990), who coined the term metaphtonymy as a cover term to denote the interaction of metaphor and metonymy. Some instances of such interaction are as the following: (a) Metaphor from metonymy as in *close-lipped* "saying little." (b) Metonymy within metaphor as in *bite one's tongue off* "be sorry for what one has just said."

2.2.   Chained metonymy

Chained metonymy has been proposed to account for cases where one single metonymic mapping is not sufficient to explain the semantic change occurring in a given word. For example, English *barbecue,* which originally meant 'a wooden structure on which meat is roasted', took the meaning of 'meat' itself and finally came to denote a social entertainment at which roasted meat is eaten (Nerlich and Clarke, 2001, p. 123). Chained metonymy was shown to be present not only in lexical change (Hilpert 2007) but also in grammaticalization (Heine et al., 1991).

Grammaticalization refers to a process by which lexical items change to serve grammatical functions. For example English *gonna* has become a future marker. An instance of chained metonymy in grammaticalization is as follows: Bambara *nyέ* 'eye' → face → front → before (Heine and Kuteva 2002, p. 129). Studies like these have shown that body-parts terms represent a productive source for grammaticalization.

3.   Cross-linguistic studies on body-parts terminology

One of the first cross-linguistic studies on body-parts terms were carried out by Brown and colleagues (Brown, 1976; Brown et al., 1976), whose approach rather pertains to anthropological linguistics. Their focus was on the organizing principles in body-part nomenclature. A recent updating of such organizing principles was conducted cross-linguistically in a special issue of the journal *Language Sciences* edited by Enfield and colleagues (2006).

Another cross-linguistic line of research was initiated by Wilkins (1996, pp. 273-4), where patterns of semantic change for body terms were explored. One of the reported frequent patterns is the part-for-whole metonymy (e.g. 'navel' → 'belly' → 'trunk' → 'body' → 'person'). Another tendency is that upper body terms are used to denote lower body terms and vice versa (e.g. 'vulva' → 'clitoris'; 'anus' → 'mouth').

Similar to Wilkins' approach, a study by Hilpert (2007) investigated the nature of metonymic mappings in a cross-linguistic investigation of body-parts terms from a sample of 76 languages. It was found that the semantic extensions were much more frequently simple than serial.

Recently, cross-linguistic studies of metonymy and metaphor in relation to embodiment has received much interest (Sharifan, Dirven, Yu and Neimeier 2008; Maalej and Yu 2011; Brenzinger and Kraska-Szlenk, 2014). Aspects of interaction of the body, culture and mind, as well as linguistic embodiment in its universal and cultural aspects are investigated.

4. Methodology

The present study investigates the nature of the semantic extensions of some body-parts terms across Amazigh varieties. The objectives of the study are the following: (a) to study the extent of semantic variation across Amazigh varieties through a survey of some body parts terms; (b) to explore the nature of metonymy and metaphor used in the semantic extensions of such body parts terms; (c) to determine if the metonymical and metaphorical mappings involved in these extensions are simple or serial; and (d) to study the prevalence of chained vs. simple extensions and metaphorical vs. metonymic mappings.

The analysis is based on data from 28 Amazigh varieties spoken in Morocco, Algeria, Tunisia, Libya, northern Mali, western and northern Niger, Mauritania, and in the Siwa Oasis of Egypt. The list of body-parts terms used in the present study is drawn from the available dictionaries of these Amazigh varieties (see Table 1 for the references).

Metaphor and metonymy in body parts in some Amazigh varieties:
The case of the 'head' and its parts

Amazigh variety	Reference	Amazigh variety	Reference
Tamashek of Ahaggar (Aha)	Foucauld 1951	Tamazight of South (McS)	Amaniss, non publié
Central Algeria (Ace)	Laoust 1912; Destaing 1914	Mzab (Mzb)	Delheure 1984; Nouh-Mefnoune and Abdessalam 2011
Beni Iznacen (Izn)	Renisio 1932 Rahhou 2005	Nefousa (Nef)	Beguinot 1942
Beni Snous (Sns)	Destaing 1914	Iwlemmden, Ayr of Niger (Nig)	Alojaly et al. 2003
Chaoui (Cha)	Huyghe 1906 Ounissi 2003	Ntifa (Ntf)	Laoust 1920; Dray 1998
Chenini (Chn)	Gabsi 2003	Ouargla (Oua)	Delheure 1987
Chenoua (Che)	Laoust 1912	Sened (Snd)	Provotelle 1911
Djerba (Djr)	Gabsi 2003	Senhaja de Srair (Sen)	Renisio 1932; Ibañez 1959
Douiret (Dw)	Gabsi 2003	Siwa (Siw)	Laoust 1932
Ghadamès (Ghad)	Lanfry 1968, 1973	Tashelhit (Chl)	Destaing 1938; Bounfour and Boumalek 2001; Adnor 2004
Ghat (Ght)	Nehlil 1909	Tarifit (Rif)	Renisio 1932; Serhoual 2002
Kabyle (Kab)	Dallet 1982	Timimoun (Tim)	Mammeri 2003
Tamashek of Mali (Mal)	Heath 2006	Zenaga (Zen)	Taine-Cheikh 2008
Tamazight (Mc)	Taïfi 1992; Azdoud 2011; Oussikoum 2013	Figuig (Fig)	Yeou, soumis; Kossmann, 1997; Benamara 2013

Table1. *Amazigh languages and dialects and their corresponding dictionaries.*

For each Amazigh variety, the equivalents of head, hair, face, neck, eye, ear and mouth were looked up. Only the primary meaning extensions from the dictionary entries were extracted and compared across the Amazigh varieties. Other secondary senses present in idiomatic expressions were not selected. In addition to the bilingual dictionaries, Naït-Zerrad's *Dictionnaire des racines berbères*, which

compiles attested Amazigh roots, namely those starting with the radicals B, Š, D, Ḍ, F, G (Naït-Zerrad, 1998, 1999, 2002) was also used.

One of the limitations of the present study is the fact that data come from bilingual dictionaries, but not directly from fieldwork. A dictionary may fail to include all the semantic senses of a term. Another limitation is related to the non-availability of Amazigh etymological or historical dictionaries. These would be critical in providing a diachronic record of the semantic changes affecting the lexemes.

Despite these limitations, a comprehensive survey of semantic extensions of body-part terms in Amazigh varieties yields interesting insights in two ways. First, it makes it possible to explore what semantic concepts are targeted, and which of these concepts tend to be present or absent in each Amazigh variety. Second, the pool of the different semantic extensions drawn from the data can be used to come up with generalizations about the nature and frequency of semantic extensios in general.

5. Results and discussion

This section deals with the meaning extensions associated with the Amazigh body-parts terms under study, *viz* head, hair, face, neck, eye, ear and mouth. First, I list the meaning extensions along with the Amazigh variety or varieties in which they are attested. Then, I suggest an account in terms of metaphorical or metonymical mappings. Finally, I discuss the nature of these mappings.

5.1. Head

The body term *head* involves different semantic extensions, as Table 2 below illustrates. Most of these extensions can be accounted for either by metaphor or metonymy. The non-chained metonymic extensions as shown in Table 2 are of three types: first, PART FOR PART metonymy in (2j), as 'hair' is a constitutive part of 'head'; second, PART FOR WHOLE (2h) as the body part 'head' stands for the whole 'unit of cattle'; and finally the metonymy PART FOR AN ATTRIBUTE CONNECTED WITH ITS TYPICAL FUNCTION maps 'head' onto reason, intelligence, and memory in (2f,g).

The basis of the metaphoric mappings varies from shape of head (2a,l,q), structural position of head (2b,c,o,p) to function of head (2d). Similar interpretations of pure metaphor cannot easily be proposed for (2n) and (2s): it can be assumed that the position of the head within the body is exploited metaphorically to denote 'hood' and 'bedhead'. However, the two senses can also be accounted for by metonymy: the hood is contiguous to the head and bedhead stands for the place at which the head lies.

Amazigh forms		
ixf (Chl, Mc, Ntf, Rif, Sns, Che, Cha, Dw, Snd), ix(e)f (Izn, Ace), ixf, iɣef (Mzb, Oua), ixef (Kab, Tim), iɣaf, iɣ(e)f (Nef), éɣef (Aha), eɣăf (Nig), iɣaf (Chn, Djr), iɣef (Ght), iˀf (Zen), éɣăf, éɣăff (Mal)		
Sense	*Amazigh variety*	*Process*
head	All varieties	
a. tip, point	Chl, Mc, McS, Rif, Izn, Fig, Kab, Cha, Sns, Oua, Mzb, Nig, Zen	metaphor
b. top, summit, crest	Chl, Mc, McS, Rif, Izn, Kab, Sns, Oua, Aha, Zen	metaphor
c. beginning	Chl, McS, Fig, Kab, Aha, Nig, Zen	metaphor
d. head, chief	Izn, Cha	metaphor
e. onself (reflexive)	Chl, Mc, McS, Rif, Fig, Oua, Zen	grammaticalization
f. reason, intelligence	Mc, Fig, Nig	metonymy
g. memory	Nig	metonymy
h. unit (of cattle)	Chl, Mc, Aha, Zen	metonymy
i.goat; value equivalent to a goat	Aha	chained metonymy
j. hair	Aha	metonymy
k. hairstyle	Zen	chained metonymy
l. pommel	Aha	metaphor
m. handle of sword	Aha	chained metonymy
n. hood	Aha	metaphor or metonymy
o. who is in first row	Aha	metaphor
p. best part; most important part	Aha	metaphor
q. bunch, bundle	Zen	metaphor
r. one unit	Cha	metaphor
s. bedhead	Oua (pl.)	metaphor or metonymy

Table 2. *Semantic extensions of 'head'*

In (2l-m), we have a case of chained extension showing an interaction of metaphor and metonymy: head → pommel → handle of sword. The first step in this chain starts with the metaphor OBJECTS ARE HUMAN BEINGS. The second step can be considered a PART FOR WHOLE metonymy (pommel stands for the whole handle of sword). (2h-i) is also another case of chained metonymy: head → unit of cattle →

goat → value equivalent to a goat. Structurally the chain starts with the PART FOR WHOLE metonymy, continues with the MEMBER OF A CATEGORY FOR THE CATEGORY metonymy, and closes with the PRICE FOR PRODUCT metonymy.

Apart from metonymy and metaphor, Table 2 shows one case of grammaticalization[1] of the reflexive marker developed out of the body part nominal 'head' + possessive suffix (2e).

5.2. Hair

To refer to *hair* Amazigh varieties have words derived from four different roots (1) *ZF, ZW, ZG, ZR*; (2) *NZD*; (3) KK with expressive prefix š-; and (4) *KḌ* (Laoust, 1920). Tables 3-5 list the attested forms based on the first three types of roots along with their different semantic extensions. The word for *hair* is narrowed semantically to 'long hair ' (3a, 5a), to 'thick hair' (5b), to 'dishevelled hair' (5c) and to 'Mohawk (hair cut)' (3c).

The word *hair* is extended to refer to 'mane of horse' (3d, 5e), 'horsehair' (4a), 'hair of goat, camel' (3f) and 'crest of rooster' (3g) through the ANIMALS ARE HUMAN BEINGS metaphor. The word *hair* is also extended to mean 'crest of mountain' (3g), 'splinter' (3h) and 'thread' (4b) through the OBJECTS ARE HUMAN BEINGS metaphor.

The semantic extension to 'pubic, armpit hair' in (3e) is an instance of an intrafield metaphoric change (Wilkins, 1996). It is considered intrafield because it involves the same semantic field of body part terminology and metaphorical because it is based on similarity of appearance. Such kind of extensions are common with body part terms, e.g. 'cheeks' for 'buttocks' in English and 'neck-of-hand' for 'wrist' in Hausa (Dimmendaal, 2011).

The metonymic mappings of the word *hair* are not numerous. There is one case of simple metonymy based on contiguity in (3b, hair → beard) and another case of WHOLE FOR PART metonymy (5d, hair → braid). In (3i-k) and (4c-d) we have two similar cases of serial metonymy, the first of which is more developed: mane (of horse) → string (of violon) / bowstring → single-string violin. This chained metonymy starts with the MATERIAL FOR THING metonymy (the string and the bow of the Tuareg violon are made of horse hair) and then ends with the PART FOR WHOLE metonymy (the strings stand for the violon).

An interesting case of grammaticalization is attested in Mzab (3l), where *hair* is first metaphorically used to denote 'a small quantity' as in Figuig and then is changed into an adverbial quantifier in Mzab.

---

[1] The origin of the preposition 'on' attested in some Amazigh varieties comes from grammaticalization of 'head', e.g. xf, f, ɣif (Mc), ɣif (Ntf), xef, x (Izn), ɣef, af, f (Cha), ɣef, ɣif, f (Mzb), ɣef (Nef), oʔf (Zen)

Amazigh forms			
azzar (Chl, Ntf), azaf (Izn), zaf (Sns, Ace), zaff (Fig, Mzb, Oua), aẓeffu (Tim), zaw (Cha, Chn, Snd, Nef), ẓaw (Dw), izzaw (Djr), azag (Mc), iziff (McS), izawggan (Rif), ăzaw, ăzag (Nig), ăẓiw (Aha), aẓagg (Mal)			
Sense	**Amazigh variety**		
hair	All except Mc, Rif, Nig, Aha, Mal		
b. a. long hair	Mc		specialization
b. beard	Mzb (pl.)		metaphor (intrafield) or metonymy
c. mohawk (hair cut)	Mc, McS		metonymy
d. mane (of horse)	Mc, McS, Aha, Mal		metaphor
e. pubic, armpit hair	Rif (pl.)		metaphor (intrafield)
f. hair (of goat, camel)	Rif		metaphor
g. crest (of rooster, of mountain)	Mc		metaphor
h. splinter	McS		metaphor
i. string (of violon)	Aha		chained metonymy
j. bowstring	Aha		chained metonymy
k. single-string violin	Aha		chained metonymy
l. a small quantity	Fig (n.), Mzb (adv.)		metaphor, gramm

Table 3. *Semantic extensions of 'hair' (Root with Z as first radical)*

Amazigh forms			
inezḍ, anezḍ (Mc), ineẓad (McS), anzeḍ (Rif), inzeḍ (Sen), anẓad, inẓad (Kab), imẓad (Aha), anẓad, enẓad (Nig)			
Sense	**Amazigh variety**		**Process**
hair	Rif, Sen, McS, Kab, Aha, Nig		
c. a. horsehair	Aha, Kab		metaphor
b. thread	Kab		metaphor
c. string (of violon)	Aha		chained metonymy
d. single-string violin	Aha		chained metonymy

Table 4. *Semantic extensions of 'hair (NẒD root)*

Amazigh forms		
ašakka, ašakuk, tašakukt (Chl), ašekkuš, ašakkuš (Mc), ašakuk (Ntf, McS), aškuk (Sen, Rif$_1$), ašenkuk (Rif$_2$, Izn), ăhkûk (Aha)		
Sense	*Amazigh variety*	
hair	Sen, Izn, Rif$_{1-2}$	
a. a. long hair	Chl, Ntf, McS	specialization
b. thick hair	Chl, Mc	specialization
c. dishevelled hair	Aha	specialization
d. braid	Rif$_1$	metonymy
e. mane (of horse)	Chl	metaphor

Table 5. *Semantic extensions of 'hair (KK root)*

5.3. Face

The different extensional meanings of the body term *face,* as they are attested in some Amazigh varieties, are given in Table 6. Most of the extensions are based on the metaphor OBJECTS ARE HUMAN BEINGS to denote the surface or the front side of things (6a-g). The face stands metaphorically for honour, respectability in (6j), for esteem/respect in (6l), and for favouritism/ impartiality in (6m). Such metaphors are instances of conceptual mapping from a concrete domain (body part) to an abstract domain. The metaphors are used conceptually or cognitively to express abstract concepts such as honour, esteem and respect. It seems that the metaphors originate from a PART FOR WHOLE metonymy. An important body part of a person, i.e. the face which he shows (or hides from) others stands for the whole person, including his personality traits, moral values and social standing (Strecker, 2011). It is interesting to note that an instance of such PART FOR WHOLE metonymy is actually attested in Tamazight of Central Morocco, where *face* denotes an 'honourable, respectable person' (6k). The interplay between metaphor and metonymy such as it is shown here is a common phenomenon across languages (Panther & Radden, 1999). As Yu (2008, p. 249) points out "metonymy very often is the link between bodily experience and metaphor in the mapping process from concrete experience to abstract concepts."

Amazigh forms		
uḍm (Chl), udem (Mc, Ntf, Oua, Kab, Mzb, Izn, Rif, Cha, Ace, Tim, Sns, Snd, Nef, Ght), ûdem (Aha), udem, uden (Nig), admi (Siw), idem (Mal), eđem (Zen)		

Sense	Amazigh variety	Process
Visage, face	All varieties	
a. surface	Chl, Nig, Cha, Aha, Nig	metaphor
b. appearance	Chl, Cha	metaphor
c. front or broadside of a building	Chl, Mc, Cha, Rif	metaphor
d. front side (of thing)	Chl, Mc, Fig, Izn, Rif, Cha, Nig	metaphor
e. obverse (of coin)	Rif	metaphor
f. upper (of shoe)	Nig	metaphor
g. page (of a book)	Nig, Zen	metaphor
h. page, sheet (of paper)	Mal	chained metonymy
i. abomasum	Izn	metaphor (intrafield)
j. honour, respectability	Chl, Mc, Fig, Izn, Rif	metaphor
k. honourable, respectable person	Mc	chained metonymy
l. esteem, respect	Nig	metaphor
m. favouritism, impartiality	(pl.) Mc, Rif, Fig, Kab	metaphor

Table 6. *Semantic extensions of 'face'*

To further illustrate the complex nature of the interaction between metaphor and metonymy in the case of the body-part *face*, a decompositional approach is adopted (Yu, 2008). In (1), the conceptual metaphor HONOUR IS FACE is analysed through its component elements:

(1) a. HONOUR IS FACE AS A VALUABLE POSSESSION (a complex metaphor)

  b. HONOUR IS FACE AS A PHYSICAL OBJECT (a complex metaphor)

  c. HONOUR IS A FEELING (a proposition)

  d. FACE IS A PHYSICAL OBJECT (a complex metaphor)

  e. A FEELING IS A PHYSICAL OBJECT (a primary metaphor)

  f. FACE STANDS FOR A FEELING (a metonymy)

  g. HONOUR IS A DESIRABLE FEELING (a proposition)

The decompositional analysis in (1) indicates that the metaphor HONOUR IS FACE has a complex structural pattern based on a blending of metaphorical, metonymic,

and propositional components. A similar structuring of such components was reported for English and Chinese (Yu, 2008), where the body-part *face* gives rise to complex metaphors composed of a combination of metaphors, metonymies and propositions. However, these complex metaphors differ from those of Amazigh in terms of selection of the concepts. In English and Chinese the body-part *face* is equated with concepts like courage, effrontery, dignity and prestige. But in Amazigh, as seen earlier *face* is equated with different concepts, namely honour, respectability, esteem/respect, and favouritism. This differentiation of conceptualization is believed to be culture-specific (Gibbs, 2008; Kövecses, 2005; Lakoff and Johnson, 1999; Sharifian et al., 2008; Yu, 2008).

Turning now to the other senses associated with the body-part face, the probable basis of the intrafield metaphor of *face* as 'abomasum' in (6i) is the fact that the latter represents the final and real stomach compartment in ruminants.

The sense designation 'page, sheet (of paper)' in (6h) cannot be understood if we do not consider it as the consecutive step of a chained extension involving as a first step the sense 'page (of a book)', which actually denotes the inscribed side (of a book). The first step consists of the OBJECTS ARE HUMAN BEINGS metaphor and the second step is a PART FOR WHOLE metonymy.

5.4. Neck

To denote *neck* Amazigh varieties have words derived from two different roots: *R* and *GRḌ*. Tables 7 and 8 list the attested forms based on these two roots along with their different semantic extensions. The majority of such semantic extensions can be accounted for either by metaphor or metonymy.

Amazigh forms		
ir (Mc, McS), iri (Rif, Izn, Kab, Cha, Mzb, Oua, Snd, Nef, Nig, Ght), êri (Aha), érr (Mal)		
Sense	*Amazigh variety*	*Process*
Neck	All except Mc, McS	
a. edge	Mc, Izn, Fig, Kab, Cha	metaphor
b. collar	Mzb, Oua, Aha	metaphor or metonymy
c. responsibility	Rif, Izn, Fig, Kab, Cha, Mzb, Nig	metaphor
d. conscience	Rif	metaphor
e. audacity	Fig	metaphor
f. head	Rif	metonymy
g. back, shoulder	Kab	metonymy
h. upper third of spine & meat cut	Mal	metonymy
i. (narrow) pass	Aha	metaphor
j. front side/face (of mountain, dune)	Nig	metaphor
k. foothill, hill	McS	metaphor, metonymy
l. affluent (of river)	Mal	metaphor
m. around (locative); around (time)	Mc (pl.)	grammaticalization

Table 7. *Semantic extensions of 'neck' (R root)*

Analysis of the metaphoric mappings in Tables 7 and 8 indicate that they are of two kinds. The first type, which is OBJECTS ARE HUMAN BEINGS THINGS metaphor exploits resemblance to the neck, namely its narrow or constricted feature, for the following meaning extensions: 'edge' (7a), (narrow) pass (7i), 'affluent (of river)' (7l), 'neck (of bottle)' (8e), and 'winding mountain trail' (8h). Such resemblances seem to be of the image-schematic kind characteristic of metaphors. An exception to these metaphors is the sense extension 'leather oil flask' in (8i). It seems reasonable to hypothesize that the word for 'neck' originally designated 'neck of

(oil flask)' and came to denote the oil flask itself through the PART FOR WHOLE metonymy

The second type of metaphor is conceptual as it uses the body part *neck* as the locus of the following abstract concepts: (moral) responsibility (7c, 8m), conscience (7d) and audacity (7e).

The metaphor of moral responsibility and conscience appears to be an instance of the general conceptual metaphor OBLIGATIONS ARE PHYSICAL BURDENS (Lakoff and Johnson, 1980). Such a metaphor can be viewed as having a metonymic basis, whereby the neck is part of the body on which burdens or other things are carried. The metaphoric extension of *neck* as 'audacity' is another particular case of using salient body parts to stand for a behavioural trait (cf. a similar metaphoric extension but with the terms 'face' and 'cheek' in English).

Apart from metaphor, the metonymic mappings for the neck as shown in Tables 7 and 8 are of two types: simple and serial. Semantic extensions based on simple metonymy are mostly based on physical contiguity: 'head' (7f), 'back, shoulder' (7g), 'nape of the neck' (8b), 'throat' (8c) and 'upper third of spine and meat cut' (7h). As regards serial metonymy, Table 8 shows there are three instances as illustrated below:

(2)

(i) neck → voice → voice timbre
(ii) neck → throat → murder → human life → debt of blood
(iii) neck → person → human life

The first chained metonymy (2i), attested in Tachelhit, maps *neck* onto 'voice' through the INSTRUMENT FOR ACTION metonymy (the instrument which is actually the larynx is metonymically part of the neck[2] and is closely related to 'voice') and further onto 'voice timbre' through the ACTION FOR PROPERTY metonymy. The second chained metonymy found in Kabyle (2ii) starts with the WHOLE FOR PART metonymy, as the throat is part of the neck, continues with three metonymic mappings based on conceptual contiguity (murder, which is killing of human life is committed by throat cutting or hanging and incurs a debt of blood). The third serial metonymy attested in Tamazight (2iii) is less developed compared to (2ii) and consists of only two extensions: 'person' and 'human life'. The first step is motivated by the PART FOR WHOLE metonymy and the second step can be considered as a PROPERTY FOR THING metonymy.

Apart from the lexical extensions above, Table 7 shows the presence of a grammatical chained extension in Tamazight of Central Morocco (7m):

(3) neck → edge → around (locative) → around (time).

---

[2] Radden (2004) cites two languages that map 'throat' and 'neck' onto 'voice': Konni and Tok Pisin, respectively.

Structurally, this chain begins with the metaphor OBJECTS ARE HUMAN BEINGS, continues with the PART FOR ORIENTATION metonymy and closes with the metaphor TIME IS SPACE. This process of grammaticalization is an instance of a more general process whereby body parts are mapped onto spatial concepts which again are used to express temporal concepts. A similar example of such grammatical chained extension is the grammaticalization of the body part 'back' reported to be common in many languages: back → back part → behind → after (Heine and Kuteva, 2002; Hilpert, 2007).

Table 8 shows an uncommon semantic extension of *neck* to denote 'time, period' in Tamazight of the South (8n). This semantic shift appears to be part of a chained extension that has become opaque. We postulate that the missing intermediate steps of the chain are similar to those attested in Tamazight of Central Morocco, as shown in (3). If this hypothesis is true, the mapping from *neck* onto 'time' can be considered a case of opaque degrammaticalization. The metonymy PART FOR WHOLE would account for the reversal of the grammatical temporal marker 'around' to denote a more general concept 'time, period'

The semantic extension of *neck* to refer to 'collar' (8g) can be accounted for by metonymy, as the collar is physically contiguous to the neck, or by metaphor since the collar is similar to the shape of the neck.

Amazigh forms		
agerḍ, ameggerḍ (Chl), amgerḍ, tamgerṭṭ (Mc), agert (McS), agʷerḍ$_1$, amgerḍ$_2$, tamgerṭ$_3$ (Kab), égărăḍ (Nig), édžereḍ (Aha), egaṛḍ (Zen)		

Sense	Amazigh variety	
neck	Chl, McS, Kab$_{2-3}$, Zen	
a. a. long neck	Mc	specialization
b. nape of the neck	Kab$_2$, Nig	metonymy
c. throat	Kab$_3$	metonymy
d. voice, voice timbre	Chl	chained metonymy
e. neck (of bottle)	Chl, Zen	metaphor
f. headstall (of bridle)	Nig, Aha	metaphor or metonymy
g. collar	Mc, Kab$_{1,3}$	metaphor or metonymy
h. winding mountain trail	Chl	metaphor
i. leather oil flask	Chl	metonymy
j. person	Mc	metonymy
k. human life	Mc, Kab$_3$	metonymy
l. murder, debt of blood	Kab$_3$	chained metonymy
m. moral responsibility	Mc	metaphor
n. time, period	McS	degrammaticalization

Table 8. *Semantic extensions of 'neck' (GRḌ root)*

5.5. Eye

Almost all the semantic extensions in Table 9 can be analysed as metaphors, in which aspects of the *eye* domain are mapped onto other domains. The metaphorical mapping is based on the shape of eye in (9b-p), on its structural position in (9s-t) and on both in (9l;q-r). In the semantic extension 'water-spring' (9a), it seems that it is the function of *eye* as a source of tears that is exploited metaphorically. Among the nineteen metaphoric extensions of the body part *eye* given in Table 9, six are intrafield metaphors as they involve the same domain of body part terminology (knee-pan[3], nostril, ankle, ventricle, tip (of finger), opening (of ear).

Apart from pure metaphors, Table 9 shows an interesting case of grammaticalization occurring in Tamashek of Mali, where *eye* is used to express deictic location 'this way' (9t) through the metaphor BODY PART FOR ORIENTATION (*iža tétt* 'he went this way', Heath, 2006, p. 737).

---

[3] It is interesting to note how other Amazigh varieties equate *knee-pan* with rounded objects such as 'bowl' (taqeḍḍuḥt (Fig) or 'whorl or disc of spindle' (tagš(t)rirt (Chl), tagešrirt (Ntf), takeštrirt, takešrirt, tašetrirt, tašekrirt (Mc), agʷešrir (Kab), tagešrirt, tayešrirt (Sns).

Amazigh forms		
tiṭṭ (Chl, Mc, Fig, Mzb, Oua), tiṭ (Ntf, Izn, Rif, Kab, Cha, Tim, Snd, Nef, Aha), tiṭ(ṭ) (Sen), hiṭ (Che), teṭ (Sns), tiṭ, teṭ, heṭ (Ace), ṭiṭ (Dw, Djr, Chn), tiṭ, ṭeṭṭ (Siw), tšiṭ (Ght), tyeṭṭ, šeṭṭ (Nig), téṭṭ (Mal)		
Sense		
eye	All varieties	
a. water-spring	Izn, Fig, Kab, Ace, Sns, Ght, Siw, Aha, Nig, Zen	metaphor
b. eye of a needle	McS, Ntf, Rif, Fig, Kab, Ace, Nig, Mal	metaphor
c. mesh (of net), stitch	Chl, Rif, Izn, Sns, Ace, Oua	metaphor
d. sun-disk	Mc, Ntf, Rif, Fig, Oua, Zen	metaphor
e. orifice, opening	Mc, Izn, Kab	metaphor
f. mouth (of watercourse, source)	McS	metaphor
g. knee-pan	Mc, Rif, Oua	metaphor (intrafield)
h. tip (of finger)	Rif	metaphor (intrafield)
i. opening (of ear)	Rif	metaphor (intrafield)
j. nostril	Rif	metaphor (intrafield)
k. ankle	Nig	metaphor (intrafield)
l. ventricle	Nig	metaphor (intrafield)
m. bud, flower	Ntf, Aha, Mal	metaphor
n. water bubble	Izn	metaphor
o. link (of chain)	Kab	metaphor
p. buttonhole	Kab, Nig	metaphor
q. sound hole	Aha	metaphor
r. anvil hole	Nig	metaphor
s. centre	Mc, Oua, Nig	metaphor
t. this way (direction)	Mal	grammaticalization

Table 9. *Semantic extensions of 'eye'*

5.6. Ear

The word denoting *ear* in Amazigh varieties involves a number of semantic extensions, as shown in Table 10. Most of such extensions are motivated through the metaphor OBJECTS ARE HUMAN BEINGS. The shape or structural position of the human body part *ear* is exploited metaphorically as a model for objects which do not have the same structure in (10d-k). The objects either resemble the ear in shape or relative position or in terms of a projection on the side of these objects. Sometimes such resemblance may not be clear for some traditional tools such as the arm (of saddle pommel) in (10i). In fact, the pommel of the Tuareg saddle is cross-shaped, unlike the Western one which is rounded and upward-projecting. Tamashek of Niger maps *ear* onto 'arm' of this pommel on the basis of this cross-shaped feature.

The last metaphor in (10l), which equates *ear* with a special tax is difficult to account for. It is possible that it is rather an instance of a jargon or secret glossary intended to conceal the content of words or utterances from outsiders.

Amazigh forms
ameẓẓuɣ (Chl), tamezzuɣt (Mc), amezzuɣ (Ntf, Sen, Che, Ace), ameẓẓuɣ, amezzuɣ (Rif), amezzuɣ, timežžet (Izn), tameẓẓuɣt (Kab), amzuɣ (Cha), tamežžit (Oua), tam(ez)zuxt (Mzb), tamedžit (Snd), tmeddžit (Nef), tameẓẓuk (Ght, Nig), tămeẓẓuk (Aha), tamaẓẓuɣ (Chn), amaẓẓuɣ (Dw), tamazzuɣt (Djr), tameẓẓuk (Nig), tameẓẓuk, tamăẓẓuk (Mal), tamaẓguḌ (Zen)

Sense	Amazigh variety	Process
ear	All	
a. mumps	McS (pl.)	metonymy
b. tonsil infection	Rif (pl.), Izn (pl.)	metonymy, metaphor (intrafield)
c. person	Rif	metonymy
d. eyelet	Mal	metaphor
e. endpoint, corner (of cushion, wallet)	Nig	metaphor
f. bar (of plough)	Rif	metaphor
g. handle (of winnowing-fan)	Rif (pl.)	metaphor
h. handle (of container)	Nig	metaphor
i. arm (of saddle pommel)	Nig	metaphor
j. leaf (of plant)	Nig	metaphor
k. emerging leaf	Rif	metaphor
l. tax (paid to French protectorate)	Mc	metaphor?

Table 10. *Semantic extensions of 'ear'*

The remaining semantic shifts in Table 10 involve two types of metonymy. The first one in (10c) is a PART FOR WHOLE metonymy (the body part *ear* stands for the whole person). A similar metonymy has already been noted for other body parts: 'face' in (6k) and 'neck' in (8j). The second one may be considered an instance of the BODY PART FOR ILLNESS metonymy, as *ear* is associated with two medical conditions, *viz.* 'mumps' in (10a) and 'tonsillitis' in (10b). The problem is that the organs responsible for the two medical conditions are not the ears but the salivary glands and the tonsils, respectively. The metonymic interpretation is based on the fact that one of the symptoms of the two illnesses may include sore ears. One possible interpretation at least for tonsillitis is to postulate a metaphorical basis of the BODY PART FOR ILLNESS metonymy, consisting of a mapping of *ears* onto 'tonsils'.

Another possible explanation is to suggest that both medical conditions are instances of "metaphorical projection from shapes onto attributes onto functions […] That is, illness is attributed to the organ due to a conceptualization of the organ as cause" (Ibarretxe-Antuñano, 2008, pp. 105-6). Such conceptualization is interesting in that it reflects variance in the cultural models of the body.

5.7. Mouth

The body term *mouth* involves different meaning extensions across Amazigh varieties, as Table 11 below illustrates. Once again metaphor and metonymy account for all of these extensions. In (11a-g) there are 7 pure metaphors, the most common of which is in (11a) equating *mouth* with 'entrance, opening, orifice'. In (11l-n) there are 3 intrafield metaphors which are used to denote 'ear lobe', 'anus' and 'vagina'. With the exception of 'ear lobe' the two other semantic extensions have taken on a derogatory meaning through the process of pejorization.

Amazigh forms		
imi (Chl, Mc, Ntf, Sen, Izn, Che, Cha, Ace, Sns, Mzb, Oua, Snd, Nef, Nig, Chn, Dw, Djr, Ght), ame (Ghd), émi (Aha), emmi (Zen), émm (Mal)		
Sense		
mouth	All	
a. entrance, opening, orifice	Chl, Ntf, Sen, Rif, Izn, Fig, Che, Cha, Sns, Mzb, Oua, Snd, Nef, Chn, Dw, Djr, Ght, Aha, Nig, Zen, Mal	metaphor
b. edge, border, selvage	Mc, Fig, Mal	metaphor
c. mouth (of water-way)	Kab, Aha	metaphor
d. beginning, first part	Oua, Nig	metaphor
e. tip end (of sth)	Mzb, Mal, Nig	metaphor

f. cutting edge, point	Nig, Aha	metaphor
g. trap	Mc	metaphor
h. mouthful, small quantity	Chl, Mc, McS, Oua	chained metonymy
i. person (to provide for)	Mc	metonymy
j. teeth, denture	Mc, Fig, Aha	metonymy
k. language, manner of speaking	Aha	chained metonymy
l. ear lobe	Nig	metaphor (intrafield)
m. anus	Mc, Nig	metaphor (intrafield)
n. vagina	Mc	metaphor (intrafield)

Table 11. *Semantic extensions of 'mouth'*

With regard to metonymy, Table 11 shows the presence of two simple metonymies and two chained ones. In (11i) the simple PART FOR WHOLE metonymy motivates the semantic shift from *mouth* to 'person'; in (11j) equating *mouth* with 'teeth, denture' can be accounted for by the PART FOR PART metonymy, since both teeth and denture are constitutive parts of mouth.

In (11k), a serial extension maps *mouth* onto 'language' through the INSTRUMENT FOR ACTION metonymy and further onto 'manner of speaking' through the ACTION FOR MANNER metonymy. This is an instance of the cross-linguistically common tendency to equate 'mouth' and 'tongue' with language and speech (Hilbert, 2007; Radden, 2004). The other chained metonymy in (11h), which is common across languages, starts with CONTAINER FOR CONTENT metonymy (*mouth* for 'mouthful') and ends with the metaphorical mapping of 'mouthful' onto 'small quantity'.

6. Conclusion

One of the research questions of this study is about the prevalence of chained vs simple extensions and metaphorical vs metonymic mappings. The survey of Amazigh body terms indicates that metaphor is more frequent than metonymy: 62% and 30%, respectively. Among the metaphors, 10% are intrafield and among the metonymies only 11% are chained. This is in agreement with the study of Hilpert (2007) reporting that simple metonymies are more predominant than chained metonymies. Besides, in line with Goossens (2002), it is shown that it is sometimes difficult to distinguish metonymy from metaphor as the boundaries between the two are fuzzy.

Analysis of the conceptual use of metaphors and metonymies in this study confirms some universal tendencies such as the preferences for HUMAN OVER NON-HUMAN, WHOLE OVER PART, VISIBLE OVER NON-VISIBLE and CONCRETE OVER ABSTRACT (Radden and Kövecses, 1999). The primacy of bodily experience explains why body parts terms are universally used to access meaning that is abstract. The present paper shows how abstract concepts like honour, moral responsibility, reason, and intelligence are understood through conceptual metaphors grounded in the human body.

The cross-linguistic investigation reveals that there is significant variation in the semantic extensions of body parts terms among the Amazigh varieties. For reasons of space, it is not possible to compare the conceptualizations of body parts in Amazigh with other languages in detail. In fact, there are a number of cases in support of the currently-held view that although body parts are a universal source for the construction of meaning, they do not necessarily lead to the emergence of universal meaning extensions. Such variability can be accounted for by the fact that human beings live in different physical environments and social-cultural contexts (Gibbs, 2008; Kövecses, 2005; Lakoff and Johnson, 1999; Sharifian et al., 2008; Yu, 2008). A case in point is the conceptual metaphor that uses the body part *neck* as the locus of abstract concepts such as: (moral) responsibility, conscience and audacity (cf. Tables 7-8). Or again, the use of *face* as source-domain for the abstract concepts of honour, respectability, esteem/respect, and favouritism/impartiality (cf. Table 6). The selection of such target concepts is a matter of cultural preference. For example, languages such English and Chinese associate the face with different target concepts: courage, effrontery, dignity and prestige (Yu, 2008).

Another instance of uncommon conceptualization is the mapping of *ear* onto medical conditions, *viz* mumps and tonsillitis, which are not caused by the ears (cf. Table 10). Such mapping reflects differential cultural models of the human body. In other cases, differential viewpoint preferences may explain a number of uncommon semantic extensions reported in this study: e.g. the grammatical extension of *eye* as 'this way' in Tamashek of Mali (Table 9) and of *neck* as 'around' in Tamazight of Central Morocco (Table 7); or the lexical extension of eye → centre in Tamazight of Central Morocco, Ouargali and Tamashek of Niger (see Table 9).

Bibliography

Adnor, A. (2004), *An electronic Tashlhit-English dictionary (prototype)*. Thèse de Doctorat D'Etat. Université Mohammed V University, Rabat.

Alojaly, G, Prasse, K.G. Alojaly, G., & Ghabdouane, M. (2003), *Dictionnaire touareg-français.* Copenhagen : Museum Tusculanum Press.

Amaniss, A. (non publié), *Dictionnaire Tamazight-Français.*

Azdoud, D. (2011), *Dictionnaire Berbère-Français.* Paris : Editions de la Maison des sciences de l'homme.

Beguinot, F. (1942), *Il Berbero Nefûsi di Fassâto. Grammatica, testi raccolti dalla viva voce, vocabolarietti.* Roma : Istituto per l'Oriente.

Benamara, H. (2013), *Dictionnaire Amazighe-Français : Parler de Figuig et ses régions*. Rabat : Publication de l'IRCAM.

Bounfour, A. & Boumalek, A. (2001), *Vocabulaire usuel du Tachelhit.* Rabat: Centre Tarik Ibn Zyad.

Brenzinger, M. & Kraska-Szlenk, I. (eds.) (2014*), The body in language: Comparative Studies of Linguistic Embodiment*, Brill.

Croft, W. (2002), « The Role of Domains in the Interpretation of Metaphors and Metonymies », In In R. Pörings & R. Dirven (eds.), *Metaphor and Metonymy in Comparison and Contrast.* Berlin: Mouton de Gruyter. p.161-205.

Dallet, J-M. (1982), *Dictionnaire kabyle-français.* Paris : SELAF.

Delheure, J. (1984), *Dictionnaire mozabite-français*. Paris : SELAF.

Delheure, J. (1987), *Dictionnaire ouargli-français*. Paris : SELAF.

Destaing, E. (1914), *Dictionnaire français-berbère*. Paris : l'Harmattan. 2nd edition.

Destaing, E. (1938*), Etude sur la tachelhit du Sous, vocabulaire français-berbère*. Paris: Leroux.

Dimmendaal, G.J. (2011). *Historical linguistics and the comparative study of African languages*. Amsterdam: John Benjamins Publishing Company.

Dray, M. (1998), *Dictionnaire français-berbère. Dialecte des Ntifa*. Paris : l'Harmattan

Foucauld, Ch. de (1951-1952), *Dictionnaire touareg- français : dialecte de l'Ahhagar. Paris*: Imprimerie Nationale.

Gabsi, Z. (2003), *An outline of the Shilha (Berber) Vernacular of Douiret (Southern Tunisia)*. Thèse de Doctorat, University of Western Sydney.

Goossens, L. (2002), « Metaphtonomy: The Interaction of Metaphor and Metonymy in Expressions for Linguistic Action », In Ralf Pörings & René Dirven (eds.), *Metaphor and Metonymy in Comparison and Contrast*, Berlin: Mouton de Gruyter, p. 349-77.

Heath, J. (2006), *Dictionnaire touareg de Mali.* Paris: Karthala

Heine, B. & Kuteva, T.(2002), *World Lexicon of Grammaticalization*. Oxford: Oxford University Press.

Heine, B., Claudi, U., & Hünnemeyer, F. (1991), *Grammaticalization. A Conceptual Framework*. Chicago: University of Chicago Press.

Hilpert, M. (2007), « Chained Metonymies in Lexicon and Grammar: A Cross-Linguistic Perspective on Body Part Terms », In Günter Radden, Klaus-Michael Köpcke, Thomas Berg & Peter Siemund (eds.). *Aspects of Meaning Construction.* Amsterdam, Netherlands: Benjamins. p. 77-98.

Huyghe, G. (1906), *Dictionnaire français-chaouia*. Alger: Lithographie Adolfe Jourdan.

Ibañez, F. E. (1949), *Diccionario rifeño-español*. Madrid: Instituto de Estudios Africanos.

Ibañez, F. E. (1959), *Diccionario espanol-senhayi*. Madrid: Consejo superior de investigaciones cientificas.

Ibarretxe-Antuñano, I. 2008 « Guts, Heart and Liver: The Conceptualization of Internal Organs in Basque », In F. Sharifian, R. Dirven & N. Yu (eds.), *Language, Body, and Culture: Cross-linguistic Conceptualizations of Internal Body Organs.* Berlin: Mouton de Gruyter, pp. 103-128.

Kossmann, M. G. (1997), *Grammaire du Berbère de Figuig (Maroc Oriental),* Louvain/Paris : Peeters.

Kövecses, Z. (2005), *Metaphor in Culture: Universality and Variation*. Cambridge & New York: Cambridge University Press.

Lakoff, G. (1987), *Women, Fire, and Dangerous Things*. University of Chicago Press, 1987.

Lakoff, G. & Johnson, M. (1980). *Metaphors we Live By*. Chicago: University of Chicago Press.

Lakoff, G. & Johnson, M. (1999). *Philosophy in the Flesh: the Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.

Lanfry, J. (1968), *Ghadamès : étude linguistique et ethnographique*. Alger : Fichier de documentation berbère.

Lanfry, J. (1973), *Ghadamès II. Glossaire (parler des Ayt Waziten).* Alger : Fichier périodique.

Laoust, E. (1912), *Etude sur le dialecte berbère du Chenoua comparé avec ceux des Beni-Menacer et des Beni-Saleh*. Paris : Ernest Leroux.

Laoust, E. (1920), *Mots et choses berbères : notes de linguistique et d'ethnographie : dialectes du Maroc*. Paris : A. Challamel.

Laoust, E. (1932), *Siwa : son parler*. Paris : Ernest Leroux.

Maalej, Z. & Yu, N. (eds.). (2011), *Embodiment Via Body Parts: Studies from Various Languages and Cultures*. Amsterdam: John Benjamins.

Majid, A, Enfield, N. J. & van Staden, M. (eds.) (2006), *Parts of the body: Cross-linguistic Categorization. Language Sciences 28*(2-3), p. 137-360.

Mammeri, Mouloud. (2003), *L'Ahellil du Gourara*. Paris : Éditions de la Maison des sciences de l'homme.

Mrani, F. (2007), *Le lexique berbère du corps humain (Maroc central) : approche sémantique et symbolique*. Thèse de doctorat, Université Sidi Mohamed Ben Abdellah.

Naït-Zerrad, K. (1998), *Dictionnaire des racines berbères (formes attestées), I. A-BEƵL*. Paris-Louvain : Peeters.

Naït-Zerrad, K. (1999), *Dictionnaire des racines berbères (formes attestées), II. C-DƐN*. Paris-Louvain : Peeters.

Naït-Zerrad, K. (2002), *Dictionnaire des racines berbères (formes attestées), III. Ḍ- GƐY*. Paris-Louvain : Peeters.

Nehlil, -. (1909), *Etude sur le dialecte de Ghat*. Paris: Ernest Leroux.

Nerlich, B. & Clarke, D. (2001), « Serial Metonymy: a Study of Reference-based Polysemisation », *Journal of Historical Pragmatics N° 2/2*, p. 245-72.

Niemeier, S. (2000), « Straight From the Heart – Metonymic and Metaphorical Explorations », In A. Barcelona (ed.), *Metaphor and Metonymy at the Crossroads. A Cognitive Perspective*. Berlin: Mouton de Gruyter, p.195-213.

Nouh-Mefnoune, A. & Abdessalam, B. (2011), *Dictionnaire Mozabite-Français*. ENAG.

Oussikoum, B. (2013), *Dictionnaire Amazighe-Français : Le parler des Ayt Wira Moyen Atlas*. Rabat: IRCAM.

Panther, K., & Radden, G. (Eds.). (1999), *Metonymy in language and thought*. Amsterdam: John Benjamins.

Provotelle, P. (1911), *Etude sur la tamazir't ou zénatia de Qalaât es-Sened (Tunisie)*. Paris: Ernest Leroux.

Radden, G. (2004), « The Metonymic Folk Model of Language », In B. Lewandowska-Tomaszczyk and A. Kwiatkowska, eds., *Imagery in Language:*

Festschrift in Honour of Professor Ronald W. Langacker. Frankfurt/Main: Lang, p. 543-565.

Radden, G. & Kövecses, Z. (1999). "Towards a theory of metonymy". In K.-U Panther & G. Radden (eds.), *Metonymy in Language and Thought*, Amsterdam: Benjamins, p. 17-59.

Rahhou, R. (2005), *Dictionnaire berbère-français (parler des Béni-Iznassen)*. Thèse de Doctorat. Université Sidi Mohamed Ben Abdellah, Fes.

Renisio, A. (1932), *Etude sur les dialectes berbères des Beni Iznassen, du Rif et des Senhaja de Srair*. Paris : E. Leroux.

Serhoual, M. (2002), *Dictionnaire tarifit-français et essai de lexicologie amazighe*. Thèse de Doctorat d'Etat. Tetuan : Université Abdelmalek Essaâdi.

Sharifian, F., Dirven, R., Yu, N. & Niemeier, S. (eds.) (2008), *Culture, Body, and Language: Conceptualizations of Internal Body Organs across Cultures and Languages*. Berlin: Mouton de Gruyter

Strecker, I. (2011). « Tenor in culture », In C. Meyer & F. Girke, *The Rhetorical Emergence of Culture*. New York: Berghahn Books, p. 137-154.

Taïfi, M. (1992), *Dictionnaire tamazight- français*. Paris : l'Harmattan.

Taine-Cheikh, C. (2008), *Dictionnaire zénaga-français. Le berbère de Mauritanie présenté par racines dans une perspective comparative*. Köln : Rüdiger Köppe Verlag (Berber Studies 20)

Talmenssour, A. (2011), *Représentations du corps en tachelhit: polysémie nominale, expressions idiomatiques, proverbes*. Editions Universitaires Europeennes.

Wilkins, D. P. (1996), « Natural Tendencies of Semantic Change and the Search for Cognates », in M. Durie and M. Ross (eds). *The Comparative Method Reviewed: Regularity and Irregularity in Language Change*. New York: Oxford University Press. p. 264-304.

Yeou, M. (à paraître), *Dictionnaire Berbère-Français*: *Parler de Figuig*.

Yu, N. (2008), « Metaphor from Body and Culture », in: Gibbs, R. (ed.) *Cambridge Handbook of Metaphor and Thought*. New York: Cambridge University Press, pp. 247-261.