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# Deictic directionality and Space in Berber

## A typological survey of the semantics of =d and =nn

Aicha Belkadi

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### 1. Introduction

- 1 The verbal directional clitics =d and =nn have attracted much attention in the recent Berber literature. This interest is motivated by their rich distributions across varieties and a range of uses not obviously linked to their primary directional semantics. The information available, although rich and detailed, is very much distributed and still incomplete, as studies tend to focus on particular languages or dialects. Furthermore, despite being centred on the clitics' interpretations, descriptions are not formulated within particular semantic frameworks. This lack of comparison and formalism makes it difficult to define some general patterns and identify microvariations in the semantics of the directionals.
- 2 In this paper I compare the distributive properties of =d and =nn across several languages –Taqbaylit, Tashlhit, Tamazight, Tuareg, Tetseret and Ghadamsi– within Talmy's framework of event structure and verb composition. I survey a corpus of data from various sources, including previous descriptions of the clitics, grammars and my collection of Tikicurt Taqbaylit narratives. I focus on two aspects: (i) the types of semantic concepts lexicalized by the verbs modified by the directionals and (ii) the interpretations resulting from their interaction with certain concepts. The results show only two coherent semantic classes of verbs interact with the clitics as directionals across Berber –verbs lexicalising motion or describing events conventionally conceptualised as involving motion and change of state verbs. With other classes of verbs different interpretations of the directionals are derived. Although varied, the

'new' interpretations are not random; they are all derived from the clitics' directional or deictic semantics, and follow patterns attested cross-linguistically in the grammaticalization of directionals. Furthermore, the results show that the directionals closely interact with one verb component: Path, and suggest that the extension of the directionals from modifying verbs describing motion events to verbs encoding other kinds of events may be driven by their lexicalisation or not of this particular component.

- 3 The paper contains two main parts. Section 2 provides a descriptive and comparative overview of the semantics of the directionals across Berber. I show there that the directionals have two distinct functions in Berber, one as markers of deictic directionality, discussed in section 2.1. and the other as markers of Associated Motion, discussed in section 2.2. The directionals may be associated with other meanings, but these are still very much context-dependent and idiosyncratic to the semantic content of particular verbs. This is discussed in section 2.3. The second part of the paper, particularly sections 4 and 5, contains a verb-based analysis of the distribution of the clitics in Berber, fledged within Talmy's (2000) framework of event structure and verb lexicalisation. These sections are preceded by a discussion of previous analyses on the clitics in section 3.

## 2. Semantics and functions of the directionals

### 2.1 Deixis

- 4 The principal function of the clitics is to specify the direction of an event from the perspective of a deictic anchor. The ventive =*d* (and its phonological variants) encodes the deictic path 'to or toward the speaker'. The itive =*nn* (and its phonological variants) expresses the path notion 'not in the direction of the speaker'. This is illustrated with examples from Ait Seghrouchen Berber and Ghadamsi in (1) and (2).

(1) **Ait Seghrouchen** (Bentolila 1969)

a. *ɪraḥ D ǧr i*  
'He came to mine.'

b. *ɪraḥ N ǧr i*  
'He went to mine.'

(2) **Ghadamsi** (Kossmann 2013)

a. *y-útāf=əd*  
3SGM-enter.PRF=VEN

He came in (towards the speaker).

(3) b. *t-úse =n*  
3SGF-come.PRF=ITV

'She came (not in the direction of speaker).

- 5 This function as markers of deictic paths is found across Berber. Even Zuaran, Awjilah and Siwi, where the clitics are no longer in use, have lexicalised remnants on the verb as 'to come/ to arrive' and the causative motion verb which encodes the same meaning as 'to take' in English. In Siwi, Laoust (1932) contrasts the stems *aḥən* 'to take (not in the direction of DC)' and *aǧəd* 'take (in the direction of DC)/ bring' which incorporate respectively the itive *n* and ventive *d*. As for the verb *as*, it also shows traces of *d* in particular morphosyntactic contexts. The ventive is visible on the stem with some subject agreement markers, in the imperfective form *tasəd* and in the infinitive *tizdi*

(Souag, 2010). In Awjilah the ventive is only and obligatorily found with the verbs *yi=d* 'to come' and *ayi=d* 'to bring' (van Putten, 2014). Similar assimilation of the ventive with these stems are found in Zuaran (Mitchell, 2009: 200-201), as shown in the following examples.

(4) **Zuaran** (Mitchell 2009)

uγəd -γ =úk =ti

bring -1SG =2SG.M.DAT =3SGM.ACC

'I brought him to you.'

(5) usédən kmál(ə)n əlyərs dbəfd aməšwař tuřəw.

'They all came to her at home and after a while she gave birth.'

- 6 The lexicalisation of the directionals in those languages seems to be asymmetrical. Remnants of the ventive are found everywhere, but this is not the case for the itive. This asymmetry in distribution is also found in languages where the clitics are productive, and is well documented. Many varieties of Taqbaylit do not use =*nn* (Mettouchi, 1998; Aoumer, 2011; Belkadi, 2014); itive path in those varieties is unmarked. Some languages, such as Ait Seghrouchen or Tetserrret, which formally mark the distinction, tend to use the itive less frequently than the ventive (Bentolila, 1969; Lux, 2013). Other languages keep a morphological opposition mainly in contexts involving canonical motion.
- 7 The deictic anchors with respect to which the directionals are interpreted differ both across and within varieties depending on a number of factors. Many varieties use =*nn* not necessarily to describe motion 'not in the direction of the speaker' but to describe motion 'to or toward the addressee' (Bentolila, 1969; Fleisch, 2007). Furthermore, events encoded by ditransitive verbs can be anchored with respect to the indirect object, provided the speaker is not a participant of the event. In (6) the deictic anchor for =*d* can therefore be the goal argument *tqicct* 'girl'.

(6) fka-n =as =d i tqicct snat n

give.PRF-3PLM =3SG.DAT =VEN DAT girl.CS two of

tibwadin n lggatu.

boxes of sweet

'They gave her two boxes of sweets.'

- 8 Another type of contexts in which a shift of deictic anchor can be observed are events relating to natural phenomena and bodily secretions. These involve a conventionalised metaphorical motion and will be discussed in section 5. Since they involve motion, they are often specified for deictic path by the clitics. Focussing on Tashelhit, El Mountassir (2000) shows that the deictic anchor in these contexts is not the particular location of the speaker at the time of utterance, but the space generally inhabited by the speaker and other humans. Motion perceived as occurring away from the human space triggers a use of the itive directional as opposed to the ventive. Example (7) describes the downward motion of the sun from the sky into the ground, away from the human's sphere and the itive is used to orientate this motion deictically.

(7) **Tashlhit** (El Mountassir 2000)

t-ḍḍr =*nn* tafukt

3SGF-fall.PRF =ITV sun

'The sun sets.'

- 9 This shift in the deictic anchoring of the directionals seems to be pervasive, perhaps universal, across Berber. In addition to Tashlhit, examples of this phenomenon were found in Ayer Tuareg, Ghadamsi, Mali and Burkina Faso Tamasheq, Taqbaylit and Tetsrerret. Two more examples are provided below from Tetsrerret and Taqbaylit.

(8) **Tetsrerret** (Lux 2013)

məkkat ogəd as=**du** tə-zoggər tofuk  
 which moment when=VEN 3SGF-exit.IMP sun  
 s awwar  
 towards morning  
 ‘When does the sun appear in the morning?’

(9) **Taqbaylit** (Belkadi, 2010)

n-wala itij y-wt =**d**  
 2SG-see.PRF sun 3SGM-hit.PRF =VEN  
 di lwqt n tnac  
 in hour POSS twelve  
 ‘Then, we saw the sun shining (Lit. hit) as when it is noon.’

- 10 Deictic shifts are more prominent inside narratives, where in addition to the speaker the directionals can be anchored with respect to any character or location of the events recounted (Bentolila, 1969, El Mountassir, 2000). What constitutes the deictic anchor in these monologues depends on its narrative genre –whether it is a personal narrative or a folk tale–, the role played by the speaker and information structure notions. Personal narratives are informal and spontaneous accounts provided by speakers. These narratives are generally about some episodes of speakers’ lives, but they may also describe events unrelated to the speaker (Vaux & Cooper, 1999, Sakel & Everett, 2012). If the speaker is a participant of the events she is the deictic anchor for the directionals (see also Bentolila, 1969). In such contexts, the directionals function in the same way as in discourse. The following example from a personal narrative in Tikicurt Taqbaylit is characteristic.

(10) **Tikicurt Taqbaylit**

... y-uli =**d** umyar=**im**  
 3SGM-ascend.PRF =VEN old.man=POSS.2SGF  
 ‘Your father in law came up the stairs.’  
 i-dal =**d** yr=**iw**  
 3SGM-pop.one’s.head.PRF =VEN to=POSS.1SG  
 ‘He popped his head in.’  
 i-pd =**d** miskin y-u<sup>ya</sup>l  
 3SGM-arrive.PRF =VEN poor 3SGM-become.PRF  
 d awray  
 COP yellow  
 ‘The poor (man) arrived, he became yellow.’

- 11 Example (10) is from a narrative about the birth of one of the speaker’s sons. In this particular extract, she recounts how her husband arrived home after work and came in her room to check on her. All the verbs which refer to motion directed towards the speaker’s location are modified by the ventive.
- 12 When the speaker is not a participant of the narrative, different options are available. Bentolila (1969) explains that the directionals’ distribution in these contexts can be governed by anaphora. Under these circumstances, the deictic anchor of the

directionals is a current topic; either a location which has just been mentioned in the discourse, the main location of the narrative or the location of a participant established as a topic. Consider, for instance, the two following examples from Ait Seghrouchen:

(11) **Ait Seghrouchen** (Bentolila, 1969)

tiḍa La Tili ḥas G<sup>w</sup>aman; nTat lḥažt **D** iṛaḥn aTsw, La TṛaEa aT tadf

'The leech is found in water only; when an animal comes to drink, it (the leech) tries to get inside it (the animal).'

iSḍur as tnt i tišik<sup>w</sup>t; kuL lfas aTTšat tanila Ns baš ad ḡlbn, a**D** ḍṛn

'The enemy encircled Tichoukt; each post had to bombard their side so that they (the enemies) would win, and the others would come down (to the bottom of the hill where the enemies were waiting for them).'

- 13 In example (11), the ventive takes the water, which has just been mentioned, as its deictic anchor, while in (12), the ventive is used to refer to the location of the enemy, who again is the current topic.
- 14 Folk tales are traditional stories, which are told or 'performed' in a particular register and whose structure may follow particular cultural norms (Vaux & Cooper, 1999, Lüpke, 2011). These types of narratives are 'highly formalized' types of texts (Sakel & Everett, 2012). Given the special genre one might expect the directionals to function slightly differently. El Mountassir (2000) discusses the topic and identifies a number of elements which are decisive. In some contexts, the deictic centre is the main location of the folk tale. The example in (13) below is the first sentence of a folk tale about a hyena, a hedgehog and a ploughman. Since the main location is the house of the ploughman, all motion events directed towards it are modified by the ventive.

(12) **Tashlhit** (El Mountassir, 2000)

yan ḍḍur zza-n=**d** sin

one time run.after.PRF-3PLM=VEN two

ingwmarn f-yan ifis, i-rur,

hunters on-one hyena 3SGM-run.away.PRF

i-lkm=**d** yan umkraz,

3SGM-arrive.PRF-VEN one ploughman

i-nna=yas

3SGM-say.PRF=3SGM-DAT

'Once upon a time, there were two hunters running after a hyena. She ran away and arrived at a ploughman's house and asked him.'

- 15 In other contexts, the use of the directionals reflects the scission of the space into human vs. non-human. The ventive is used to direct motion towards locations traditionally inhabited by humans, while the itive directs motion away from this space. This contrast is illustrated by the following two examples, extracted from the same folk tale: =**d** is used to direct events to the house, while the itive is used to direct the motion towards the forest.

(13) **Tashlhit** (El Mountassir, 2000)

i-rur=**d** Idir ar=**d**

3SGM-ran.away.PRF-VEN Idir IMPRF=VEN

i-ttizzal s-tgmmi

3SGM-run.IMPRF to-house

'Idir ran away to the house.'

(14) lliḡ i-km y-af=**nm**

when 3SGM-arrive.PRF 3SGM-find.PRF-ITV  
 yan uchchn mzzziyn  
 one small jackal  
 ‘When he arrived, he found (inside the forest) a small jackal.’

- 16 Finally, the directionals are also found in formal introductions and conclusions of folk tales. The itive directional is used in introductory expressions, which set the location of the story in a distinct space and time:

(15) i-kka-tti=**nn** yan dḍur  
 3SGM-be.somewhere-3SGF.ACC-ITV one time  
 ḡ-yat tmazirt ur i-ssn yan  
 in-one country NEG 3SGM-know.PRF one  
 ‘Once upon a time in a country that no one knows...’

- 17 The ventive is found in concluding expressions, such as (16).

(16) yinn aḡ-tt=**nn** fl-ḡ  
 there in-3SGF.ACC=ITV leave.PRF-1SG  
 achkh=**d** s-ḡid  
 come-1SG-VENT toward=here  
 ‘I left her there and I came back here.’

## 2.2 Associated Motion

- 18 The directionals encode a second type of function, derived from their deictic path semantics, which I will refer to as Associated Motion<sup>1</sup> (AM). AM involves the presupposition of an additional motion event prior, concomitant or subsequent to the event described by the verb. Consider for instance the following sentence from Ait Seghrouchen:

(17) **Ait Seghrouchen** (Bentolila, 1969)  
 aḡaḡ aḡm =**d** aman  
 go.AOR draw.out.AOR VENT water  
 ‘Go draw out some water (and bring it here).’

- 19 In (17) the ventive does not specify a deictic path for the event encoded by the verb — *aḡm* ‘to draw out’. Instead it implies the occurrence of an independent motion event, which is itself directed to the deictic centre. Thus the interpreted meaning is not the expected ‘draw out water from the inside of a well out into the human sphere’, but one where the subject comes to the location of the speaker after the event.
- 20 This use of the directionals differs in important respects from their canonical deictic uses. Compare, for instance, (18) and (19) from Taqbaylit, which involve respectively an AM use of the ventive and a typical deictic directional use.

(18) **Taqbaylit**  
 i-ḡum =**d**.  
 3SGM-swim.PRF =VEN  
 ‘He (went somewhere) swam and came back (to the location of the speaker or to his house).’  
 Not available: ‘He swam (towards or to the location of the speaker).’  
 (19) t-jjlb =**d** yr tavla.

3SGF-jump.PRF =VEN to table

'She jumped on the table (in the direction of the speaker).'

- 21 The verb 'jump' describes a motion event occurring in a certain manner<sup>2</sup> –a motion through the air by exerting force onto one's own legs. =*d* contributes a deictic path semantics to that event, and the resulting interpretation is one in which the endpoint of the jumping corresponds to the location of the speaker. In (18), while the verb 'swim' also encodes motion and manner –i.e. moving one's body in water– the deictic clitic does not mark the endpoint of this event as corresponding to the location of the speaker. Just like the example discussed by Bentolila, AM is derived, and is oriented deictically.
- 22 Since the deictic path component in AM is not a subpart of the event, it also differs from directional interpretations of deictics in terms of Tense-Aspect-Mood sharing. In contexts where the main verb is in the imperfective, the additional motion event can be understood with a different TAM semantics. This results in a mismatch between the time of the event described by the verb and the path associated with the deictic.

(20) **Tikicurt Taqbaylit**

lla =*d* i-tt-awum

PROG =VEN 3SGM-IMPRF-swim.IMPRF

'He is swimming and then he will come.'

- 23 Examples of AM are mentioned and found in several other Berber languages, including Tashlhit, Tamasheq, Ayer Tuareg, Tamazight, Ghadamsi and other varieties of Taqbaylit. However there are small variations between the languages surveyed. It seems to be quite marginal in Taqbaylit dialects, while Mali Tamasheq, at the other end, seems to make very high uses of AM. In this domain too, the ventive and itive display asymmetrical distributions. Apart from Tamasheq and Ghadamsi, most examples of AM involve =*d* rather than =*nn*.
- 24 There are variations across and within dialects regarding the time in which the AM event takes place relative to the event encoded by the main verb. In Ait Seghrouchen (Bentolila 1969) and Taqbaylit, AM is either posterior to the main verb's event (e.g. *do X and come* or *go get Y and bring it*) or concomitant to it (e.g. *do X while coming*). In Ghadamsi, Kossmann (2013) describes AM meanings for the itive with verbs of verbal interaction, such as *ǎn* 'to say', *asli* 'to call', *ǎsmaǎǎji* 'to speak'. In addition to describing that the agent is in a location distinct from the deictic centre, =*nn* can also presuppose that the agent has moved away from the deictic centre prior to speaking. Mali Tamasheq (Heath 2005) allows different time relations between the verb's event and the AM event:

- 25 Concomittance

(21) i-ššəγæ =*ǎdd*

3SGM-work.PRF =VEN

'He came working (he was working as he came).'

- 26 Precedence

(22) i-kfa =*hín* ázrəf è mæssi-s

3SGM-give.PRF =VEN money DAT master-3SGPOSS

'He went and gave the money to his master.'



## 27 Subsequence

(23) ad ækk-æγ γás  
 FUT go.to.AOR-1SG only  
 t-a-yæððuf-t  
 FE-SG-terminate.mound-FESG  
 y æγš-æq-qæt =*ádd*  
 DAT dig.AOR-1SG-3SGFO =VEN  
 y a ákšæ-n àra-tæn  
 DAT DEM eat.RESULT-3PLM child-MAPL  
 'I will go only to the terminate mound, to dig it up and bring it, for (to get)  
 something for the children to eat.

- 28 AM uses of deictic directionals are not unique to Berber languages. The phenomenon is found in other African languages; some also from the Afro-Asiatic phylum –such as Somali (Bourdin 2006) and Pero, a Chadic language from Nigeria (Frajzyngier 1989)–, others from Niger-Congo and Nilo-Saharan families, all spoken over geographically close areas. Based on a number of intrinsic properties of directional AM in these languages, Belkadi (2015) proposes that these uses derive from pragmatic reconstructions based on inference and relevance in contexts where there is a mismatch between the deictic path semantics of these morphemes and the verb they modify. Amongst the arguments for her analysis are the facts that, in those languages, AM is construed with non-motion verbs or verbs which do not otherwise occur with deictic directionals, and the distributions of the two functions rarely overlap. What's more, it is frequent for the time relations between the verb's event and that of the AM to vary depending on which is most appropriate given the discourse and syntactic contexts.
- 29 However, these inferences, as they arise consistently, may become conventionalised and deictic directionals end-up grammaticalising into semantic markers of AM (cf. Traugott & Dasher 2002). Different languages may be at more advanced stages of grammaticalisation and use directionals to mark AM more often, with some verbs that otherwise allow a deictic path modification. In Berber, only Mali Tamasheq seems to have reached that stage. AM is the only derived interpretation of the clitics which presents enough contrasts with their basic deictic path function to be systematically distinguished, and which is recurrent across, and possibly available to, all Berber varieties. There are other types of meanings which the deictics take which are very much idiosyncratic of the content of the verb modified. They are described in section 2.3.

### 2.3 Information structure, modality and aspect

- 30 Interesting other types of meanings have been reported in the literature, relating particularly to the ventive and occurring for the most part in Taqbaylit varieties. These meanings are marginal and associated with such domains as Information Structure, modality and aspect. Mettouchi (2011) reports that the ventive may be used to mark unexpectedness. Unexpectedness, also referred to as surprising information is a particular type of new information and is related to information structure. Mettouchi provides the following example, in which the clitic provides a surprise implicature.

(24) **Taqbaylit** (Mettouchi 2011: 6)

imi-ṭ =idd t-lli

when-ABS3SG.F =VEN SBJ3SG.F-open.PRF

t-ufa =dd d baba-s

3SG.F-find.PRF =VEN COP father-KIN3SG

‘When she opened the door, she realised it was her father (unexpectedly).’

- 31 However, the meaning of unexpectedness does not seem to be provided by the clitic itself. Rather it seems to be inferred in this particular utterance based on the meaning of the verb and its interaction with the ventive semantics of the clitic. Indeed, the verb ‘to find’ encodes a particular semantics which itself may involve unexpectedness. Finding an entity presupposes that it was out of sight or perception before the event. If an entity can be found after it is searched for, which decreases the element of surprise in finding it, there are many occasions in which things are found that are not expected to be found. Along similar lines, Fleisch (2012) cites the following example from Kuningas (2008) in which the clitic seems to mark the aspectual notion of suddenness. However, again, the suddenness seems to come from both the punctuality and unexpected nature of the event described by the verb *qqers* ‘to break’.

(25) **Taqbaylit** (Kuningas 2008)

deggr-ey =tt kan yiwen webrid

push.PRF-1SG =3SGF.ACC only one time

i-qqers =d umrr=nni

3SGM-break.PFV =VEN rope=ANAPH

‘I pushed it [=the swing] only once and the rope got torn at once.’

- 32 El Mountassir (2000) presents examples showing the alternative meaning for the ventive as it interacts with the imperfective aspect in Tashlhit. The clitic triggers inchoative or inceptive implicatures; that is the imperfective is there understood as describing the beginning of an event of change of state.

(26) **Tashlhit** (El Mountassir, 2000)

a. ar i-ttisgin

IMPRF 3SGM-blacken.IMPRF

‘This is blackening’ or ‘It tends to blacken.’

b. ar =d i-ttisgin udyar=ad

IMPRF =VEN 3SGM-blacken.IMPRF fabric=DEM

‘This piece of fabric is starting to blacken.’

### 3. Verb semantics in previous analyses

- 33 The clitics as markers of deictic direction modify verbs of motion, but also occur with a range of other verbs. These other verbs encode different semantic contents and overall form different coherent semantic classes. A number of studies (Bentolila 1969; Mettouchi 1998; 2011; Heath 2005; El Mountassir 2000; Fleisch 2007; 2012; Aoumer 2011) have provided detailed descriptions of the meanings of the clitics as they interact with verbs in single dialects. These comprehensive studies constitute valuable contributions since they establish links between the clitics and specific event types, semantic arguments and grammatical contexts. The factors distinguished tend to be associated with deictic directionals cross-linguistically (Fortis & Fagard 2010; Mietzner 2012), and,

as I will try to show, they are also attributable to the common semantics verbs modified by the clitics carry.

- 34 Amongst the verbs and events found to be highly associated with the directionals are those relating to natural phenomena and bodily secretions (Bentolila, 1969; El Mountassir, 2000; Fleisch, 2012; Kossmann, 2013). As discussed in section 2.1, these events are almost exclusively encoded by motion verbs, and do form strong collocations with the clitics across Berber. Visibility, appearance or emergence is another criteria claimed to trigger high uses, again across varieties (El Mountassir 1969; Mettouchi 1997; 2011; Aoumer 2011; Kossmann 2013). In the literature, this factor is used to explain the specification by the directionals of a range of events. The passage into visibility and/or invisibility is given as a reason for the occurrence of clitics with change of states and their causatives counterparts (e.g. 27), events involving the appearance or disappearance of a physical entity into the speaker's vision (e.g. 28), of an abstract entity into/out of the speaker's mind (e.g. 29).

(27) **Ghadames** (Kossmann, 2013)

arumo:1s y-úrāw=**dd** antfal

brother:1S 3SM-give.birth:p=VEN boy

'My brother has got a boy.' (Lit. My brother has given birth to a boy)

(28) **Taqbaylit** (IEemranen variety; Aoumer 2011)

i-ḥuf=**d** axxam

3SGM-look.for.PRF =VEN house

'He looked for a house (and found it).'

(29) **Tamasheq** (Mali; Heath, 2005)

a. t-əttəwæ-d =**in**

2SG-forget.PRF-2SG =VEN

'You forgot.'

b. kattæ-n =**ədd**

remember-AOR-3PLM =VEN

'They remember (regularly).'

- 35 The appearance factor is also used to explain the frequency of the ventive on a number of verbs encoding motion in Taqbaylit such as *kšm* 'enter', *ali* 'ascend' and *k* 'come.from' (Mettouchi 1997).
- 36 In Taqbaylit still, and with respect to the ventive, Mettouchi (1997 2011) discusses a connection between viewpoint and lexical aspects. She suggests that =*d* is highly associated with telicity, an observation supported by the fact that many verbs describing events that have inherent endpoints occur frequently with the ventive. In her corpus (Mettouchi 2011), for instance, she finds that sixty five per cent of occurrences of the verb *awəḍ* 'arrive' are with the ventive, sixty six per cent for the verb *əkks* 'remove', and ninety nine per cent for the verb *as* 'reach'. All three verbs can be classified as achievements, and hence have inherent endpoints. Moreover, she proposes that =*d* may also participate in the marking of a resultative subtype of the perfective. The ventive occurs on verbs in the perfective aspect to mark a kind of TAM semantics close to that of the perfect in English (Mettouchi 1997). Its function in such contexts is to mark the relevance of the event or state described by the verb to the current context. The example given by Mettouchi to illustrate this function is in (30). The clitic marks that the event described *n-εaDa* 'we passed' has resulted in a state still true at the time of speech: the speaker knows what the government jails are like, and this state of knowledge is a direct result of they having gone through them.

(30) **Taqbaylit** (Mettouchi 1997)n-ɛaDa =**d** dg=snt,

2SG-pass.PRF =VEN in=them

n-zɣa asu swa-nt

2SG-know.PRF what be.worth.3PLF

‘We went through them (government jails) and we know what they are worth.’

- 37 Finally, verbs with an argument understood as the beneficiary, recipient or affected patient of an event have also been claimed to trigger appearance of the clitic (Mettouchi 1997 2011). This relation is supported by the fact that ditransitive verbs, whose indirect argument is marked by the dative preposition often occur with the clitics in other Taqbaylit varieties, and also that there is a high association between dative clitics and the directionals (Bentolila 1969; Mettouchi 1997; Fleisch 2012). The next examples illustrate the link.

(31) **Taqbaylit** (Mettouchi 1997)awufan a ɣBi ayn i =ɣ =**d**

please oh god what REL =2PL.DAT =VEN

ǧa-n imzura Ny

leave.PRF-3PL ancestors POSS.2PL

ur =t n-Tgir ara

NEG =3SG.MS.ACC 2PL-give.up.IMPRF NEG

‘Let’s hope that we will not give up the teachings our ancestors have left for us.’

(32) **Tuareg** (Heath, 2005)(…) əyyə̀-n =a-s =**ád**

leave.AOR-3PLM =DAT-3SG =VEN

Á-lyap w-à n ‘æ-mæ̀ɖray

SG-child ma-DEM.SG POSS SG.younger.SIB

‘[and that they should] leave the younger sibling for him [the midget].’

- 38 The above factors have asymmetrical statuses. Verbs describing natural phenomena and bodily secretions almost systematically trigger uses of the directionals as markers of deictic orientation in all Berber languages. Similarly, many verbs which lexically select for beneficiary or recipient arguments are marked in relevant deictic contexts, apparently in all Berber languages. However, it is not the case that verbs which lexically select for a beneficiary or affected argument occur with the deictic directional just to mark these participants. In the next example the same verb as used in (32) occurs with the ventive, but there is no presupposition that any argument is either affected by or benefits from the event. The sole role of the clitic seems to be to deictically modify a location giving an interpretation which could be translated as ‘they left nothing here’.

(33) wàe =**add** òyye-n àr

NEG =VEN leave.PRF-3PLM except

ənta d ‘æ-mæ̀ɖray -ənnet

3SG with SG-younger.sib -3SGPOSS

‘They left no-one, except him [the midget] and his younger brother.’

- 39 Similarly, the remaining verb contents and contexts are to be seen as patterns or tendencies more than decisive factors. It is not necessarily the case that any verb which

describes an event involving appearance/disappearance, telicity or involves an affected patient can be modified by the directionals as expressing deictic goal. Due to the nature of the corpus consulted, it is not possible to provide negative evidence that could be generalised over all Berber languages. However, Belkadi (2014) discusses some examples from Tikicurt involving verbs encoding these precise semantic features which occur with the ventive and trigger an Associated Motion interpretation instead of a deictic directional one.

## (34) Telicity

tə-ɣra =d taktaf

3SGF-read.PRF =VENT book

‘She read the book somewhere else and came back (to the location of the speaker).’

*Not available:* ‘She read the book completely’, or ‘She read the book and the content of the book appeared to her mind.’

## (35) Appearance/emergence

t-zz-bzgg =d iman =is yawk.

3SGF-CAUS-be.wet.PRF =VENT self =POSS.3SG all

‘She went somewhere, soaked herself and came back’ or ‘She arrived soaking wet (to the location of the speaker).’

*Not available:* She became wet.’

## (36) Affected object (Ethical dative)

t-čča =(y)as =d lgatu

3SGF-eat.PRF =3SG.DAT =VEN biscuit

‘She ate her biscuit (somewhere and came back)’

- 40 Belkadi (2014) also suggests that AM presuppositions constructed by speakers in such examples as (34-36) can be used as clues about the function of the clitic, and what it requires in the verb it modifies. Following work from Rappaport Hovav (2006), Rappaport Hovav and Levin (2010) and Beavers (2009 2011),<sup>3</sup> she argues that verbs which trigger AM are ‘deficient’ in some way and lack the property which makes deictic modification by =d possible with other verbs. Concretely the semantic component these verbs are missing is the very one thing speakers coerce or infer: a path.<sup>4</sup> The main argument for this analysis is that the motion event that speakers create is one that provides path; either a return path (*go do X and come back*) or a goal path (*do X and come*), and this path is the entity directed to the speaker’s location, rather than the event encoded by the verb. This idea that the clitic’s appearance is linked to the notion of path is reminiscent of Aoumer (2011)’s analysis of the ventive clitic in the IĒemranen variety of Taqbaylit. Aoumer also provides a verb-based analysis of its distribution, and proposes that verbs expressing a transition from the outside into the inside of the speaker’s space are modified by the deictic. The idea presents also similarities with El Mountassir’s work on the directionals in which he highlights the role of displacement and change in the appearance of the clitics. The path analysis however has the advantage of uniting these notions of transition, displacement and change, while also incorporating the notions of motion, telicity and beneficiaries mentioned in other studies.
- 41 Belkadi’s study focussed mainly on the ventive uses involving verbs that do not describe motion events in Tikicurt Taqbaylit. In the next section, I evaluate her hypothesis against data from different Berber languages. I show that, although the claim that all verbs which are modified by the clitics lexicalise a Path is a bit strong, the

notion is still critical to the appearance of the directionals and their extension across verb classes.

## 4. Events, verb lexicalisation and the directionals

- 42 I adopt the view of neo-generativist and cognitive semantics that the lexical meaning of verbs reflects event conceptualisations (Jackendoff, 1983; 1992; Langacker, 1992; Levin & Rappaport, 1991; 2005; Talmy, 2000 amongst others). I consider verb meaning to be composed of more abstract or primitive concepts. There are different ways in which the concepts encoded by verbs are represented or even apprehended by different approaches (see Levin & Rappaport, 2005). In the present work I adopt Talmy's compositional framework (2000). My aim is different to that of Talmy's, however the event structure he proposes for framing events can be applied to events in general and in Berber.

### 4.1 Talmy's event structure

- 43 Talmy's work focusses on how events are conceptualised and structured in language and across languages. The core of his work centres on macro-events involving motion. A macro-event consists of at least two events, encoded linguistically in the same way as single events. Consider the following English example:

(37) The rock rolled down the hill.

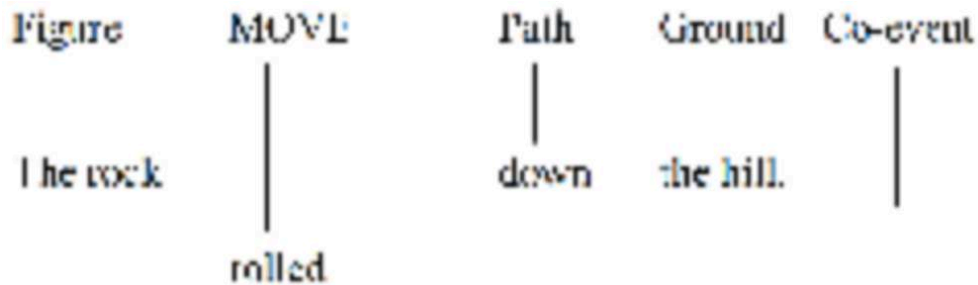
- 44 This sentence involves two events. The motion event describes the displacement of the rock over the hill. The second event is encoded in the verb 'roll' which describes a rotational self-contained motion, and stands in a relation of manner with the first event; i.e. it describes the manner in which the motion event unfolds. (37) can be paraphrased as (38), in which the two events are represented separately.

(38) [the rock MOVED down the hill] WITH-THE-MANNER-OF [the rock rolled].

- 45 In (37-38), the motion event is the main event, referred to as the framing event, while the manner event is the co-event. Co-events stand in different relations with framing events. In addition to Manner, they can also establish a causal relation, Cause. Now, a framing event consists of four components. The first component is the Figure, the entity on which attention is focussed. The second component is the Ground, which is a reference entity. The third component is an activating process, a process in which the figure entity either makes a transition or stays fixed with respect to the ground. The activating process has either of two values: transition or fixity. The fourth component is an association function, which sets up a particular relation between Figure and Ground. The association function is the schematic core of the events, the thing which distinguishes it from other types of events. The schematic core of an event is called the core schema. In the complex motion event in (37), the Figure is 'the rock' whose motion is described. The ground is 'the hill', the entity with respect to which the Figure is moving. The activating process is a translational motion, since the location of the Figure changes over time, and has a transitional value, represented in a paraphrase by the semantic component MOVE. Finally, the core schema, is the Path, lexicalised in the

preposition 'down'. The Path, which provides the trajectory traversed by the Figure, is the core schema here because it establishes a relation between the Figure and the Ground specific to this motion event. The Manner co-event is lexicalised by the verb 'roll'. Following Talmy, the respective components of the complex motion event are mapped onto lexical items as in (39).<sup>5</sup>

(39)



- 46 This representation of events is primarily aimed at describing cross-linguistic patterns in the lexicalization of complex events. The work has led to the dichotomy between Verb-framed (V-framed) and Satellite-framed (S-framed) languages depending on where the core schema of macro-events is lexicalised in the clause. With regard to motion events, S-framed languages, like English and most Germanic languages, tend to lexicalise Path outside of the main verb, as prepositions or particles (cf. 37-39). V-framed languages (e.g. Romance, Arabic) tend to lexicalise Path components in the main verb. The following example from Spanish, where the verb encodes the Path 'across' while a satellite gerund form encodes Manner, illustrates this pattern.

(40) **Spanish** (Talmy, 2000: 49)

La botella cruzó el canal flotando.  
 the bottle MOVED-across the canal floating  
 'The bottle floated across the canal.'

- 47 The typology has been revised in different ways in a range of subsequent works by other authors. One of the issues with the dichotomy discussed in the literature (and directly relevant to the description of the distribution of Berber directionals) is the fact that many V-framed languages present, under specific circumstances, S-framed patterns. Much work has focussed on these patterns in Romance languages, where some manner-of-motion verbs can combine with locative prepositional phrases to encode directional events. This pattern is illustrated in (41-42) with the Italian and French manner verbs *a rimbalzo* 'to bounce' and *courir* 'to run'.

(41) **Italian** (Folli and Ramchand, 2005)

La palla è rimbalzata sopra il tavolo.  
 the ball is bounce.PSTPRT on the table  
 'The ball bounced onto the table.'

(42) **French** (Pourcel and Kopecka 2006)

Il court dans le jardin  
 He runs in the garden  
 'He runs into the garden.'

- 48 S-framed patterns are available with certain manner-of-motion verbs, but not others. In Italian, in addition to *a rimbalzo* 'to bounce', the verbs *correre* 'to run' and *volare* 'to

fly' can also derive directional readings of locative PPs. On the other hand, *nuotare* 'to swim', *camminare* 'to walk', and *danzare* 'to dance' are not compatible with directional readings in these contexts (Folli and Ramchand, 2005).

- 49 These directional interpretations of locative prepositions are also found in S-framed languages (Gehrke, 2008). Like in Romance languages, only some manner verbs allow a directional interpretation. The two examples below from English illustrate the distinction: *jump* gives rise to a directional interpretation of the locative P *in*, but not *swim*.

(43) **English** (Gehrke, 2008)

a. Sharon jumped in the lake.

*paraphrase of the locative reading:* Sharon jumped while being in the lake.

*paraphrase of the directional reading:* Sharon jumped and (as a result) she ended up in the lake.

b. Shakuntala swam in the lake.

*paraphrase of the locative reading:* Shakuntala swam while being in the lake.

*paraphrase of the unavailable directional reading:*

\*Shakuntala swam and (as a result) she ended up in the lake.

- 50 A similar phenomenon is found in Berber, and collocations of the directionals with certain manner-of-motion verbs also strongly resemble these patterns (cf. sections 4.2, 4.3). There are a number of semantic and structural accounts of this phenomenon (see Folli and Ramchand, 2005; Fàbregas, 2007; Gehrke, 2008 amongst others). Here, I adopt Levin et al. (2009)'s pragmatic account of these constructions. Following the work of many authors (Nikitina, 2008; Kopecka, 2009 and Allen et al. 2007...), Levin et al. argue that the directional inferences found are derived from a range of contextual factors, including the type of manner encoded by the verb, the duration of the event it expresses, and the configuration of the Ground. Under this assumption, the manner-of-motion verbs which derive directional interpretations of locative prepositions are verbs which 'implicate the notion of Path without lexicalising it'. This hypothesis is supported by the fact that the manner verbs found in the S-framed patterns in Romance, but also with locative prepositions in English and Dutch are those describing motion 'characteristic of animate entities and typically used with the intent of reaching a goal', those describing punctual transitional events and those implying displacement. These patterns are moreover typically found with grounds that have precise boundaries (e.g. container-types of grounds).

## 4.2 Lexicalization of complex motion events in Berber

- 51 Berber languages can be described as predominantly V-Framed. Path is generally lexicalised in verbs rather than expressed by satellites, such as particles in English. The contrast between English and Berber is illustrated in (44) with data from Tamasheq where it can be observed that the path expressions 'after', 'in', 'out' (...) in English are encoded inside the verbs.

(44) **Tamasheq** (Burkina Faso, Sudlow 2009)

*alkəm* 'to go after', *əggəz* 'to go in', *nāwāl* 'to go around', *əjəl* 'to go away',  
*ǧǧwāy* 'to go east', *əfəl* 'to come from', *guzət* 'to come after'.<sup>6</sup>



- 52 The predominant V-framing structure of Berber is supported by the tendency to give little attention to manner of motion in narratives. As shown by Slobin (2004) the weak focus on manner of motion in the description of motion events is typical of V-framed languages. This means that most motion verbs found in narratives are those lexicalising path. The extract in (45) is from a Taqbaylit narrative based on the Pear Story film. All the verbs used to describe the motion of the different characters are verbs lexicalising path, such as *ddu* ‘to pass’, *uɣal* ‘return’, and *ruh* ‘to go’.

(45) **Taqbaylit** (Belkadi, 2010)  
 cwit ak aki y-ada=d wrgaz,  
 little like DEM 3SGM-pass.PRF=VEN man  
 ntta d taɣat=is  
 him with goat=POSS.3SG  
 ‘After a little while, a man and his goat walked past.’  
 i-tf avrid=is, i-ruh  
 3SGM-take.PRF path=POSS.3SG 3SGM-go.PRF  
 ‘He left.’  
 (...) cwit ak=a y-uɣal=d  
 little like=DEM 3SGM-return.PRF=VEN  
 yiwn n uqcic sufla uvilu  
 one of boy on.top.of bike  
 ‘A moment later, a boy came on his bike.’  
 (...) aqcic nni y-lɥu  
 boy DEM 3SGM-move.forward.PRF  
 sufla uvilu  
 on.top.of bike  
 ‘This boy, he cycled away.’

- 53 These observations are supported by Fleisch (2011)’s study of narratives based on the Frog storybook in Tashlhit Berber. He notices a similar high frequency of path motion verbs such as *ffaɣ* ‘to emerge’ or *ali* ‘to ascend’.
- 54 In contexts when the Manner co-event is described, it is most canonically lexicalised within a satellite. For instance, in Taqbaylit, manner co-events are encoded by an adverbial clause formed by the progressive particle *lla* and a manner verb in the imperfective, a construction which looks very similar to the gerund verb forms used in Romance languages to encode manner.

(46) **Taqbaylit** (Belkadi, 2010)  
 i-sub umɣar =im  
 3SGM-descend.PRF old.man.CS =POSS.2SG  
 lla y-ttazzl  
 PROG 3SGM-run.IMPRF  
 ‘Your father-in-law ran down the stairs.’

- 55 Fleisch (2011) describes a similar construction in Tashlhit, and two additional ways in which manner of motion can be expressed in this variety. First, the Path is lexicalised in the main verb, while Manner is encoded in a prepositional phrase containing a deverbal nominal:

(47) **Tashlhit** (Fleisch, 2011)  
 amxar i-ffuɣ=d ɣ=tggurt  
 thief 3SGM-emerge.PRF=VEN in=door

s=tizzla

with=run.NOM

‘The thief ran out through the door’ (lit: emerged in the door running)

- 56 Second, the complex motion event can be expressed within a ‘chained-aorist’ construction. Chained-aorist constructions are multiclausal structures in which only the first clause contains a verb inflected for aspect. The remaining clauses contain verbs in the aorist form, the semantically empty forms of verbs (Bentolila, 1981; Mauri, 2015). Aorist verbs in such sequences are dependent of the verb in the initial clause. In complex motion event descriptions, the first verb is the Path verb, and the verb lexicalising Manner occurs in the aorist form, as can be observed in (48).

(48) **Tashlhit** (Fleisch, 2011)

t-lkm =d t-rggig

3SGF-enter.PRF =VEN 3SGF-float.AOR

‘It entered (a wooden stick) floating.’

- 57 Berber languages present S-Framed patterns too that are very similar to those found in Romance languages. Locative prepositions can be found with some manner-of-motion verbs and be construed with goal interpretations. It is illustrated with the combination of the preposition  $\gamma r$  ‘at’ with the verb *azzl* ‘run’ in (49) from Taqbaylit.

(49) **Taqbaylit** (Belkadi, 2010)

mi=t wala-n ak=nni

when=3SGM.ACC see.PRF-3PLM like=DEM

y- $\gamma$ li, uzl-n  $\gamma r$ =s

3SGM-fall.PRF run.PRF-3PLM at/to=3SGM.OBL

‘When they saw that he had fallen, they ran to him.’

- 58 In the Berber literature,  $\gamma r$  is traditionally described as encoding both locative and directional semantics. But  $\gamma r$  seems to be primarily locative. It is conceived with directional meanings only after verbs of motion lexicalising path and a few manner-of-motion verbs, such as *azzl* ‘run’ or *jilb* ‘jump’. The following examples are characteristic.

(50) a. **Tamazight** (Quitout, 1997)

y-ffer  $\gamma r$  dar uma =s

3SGM-hide.PRF at house mother =POSS.3SG

‘He hid at his mother’s house.’

b. **Taqbaylit** (Chaker, 1983)

y-Tu ay-n y- $\check{c}$ a

3SGM-forget.PRF what-DEM 3SGM-eat.PRF

$\gamma r$  =n $\gamma$

at =POSS.2SG

‘He forgot what he ate at our’s.’

(51) **Taqbaylit** (Chaker, 1983)

a. dwali  $\gamma$ li-nt akw  $\gamma r$  lqaεa

vines fall.PRF-3PLF all at ground

‘The vines all fell to the ground.’

b. y-S-uF $\gamma$  =iten (...) ru $\eta$ -n

3SGM-caus-exit =3PLM go.PRF-3PLM

imir-n  $\gamma r$  Ta $\gamma$ animt.

moment-DEM at Taghanimt

‘He evicted them, at this point they went to Taghanimt.’

(52) t-jjlb **yr** tavla.  
 3SGF-jump.PRF to table  
 ‘She jumped on the table.’

- 59 The verbs in (50) translated as ‘to hide’ and ‘to eat’ are activity verbs which do not involve motion towards a goal. With these verbs it is therefore the primary locative reading of the preposition which is activated. With verbs in (51) which encode directed motion, a directional interpretation is activated. As (52) and (49) show, the verbs *azzl* ‘to run’ and *jjlb* ‘to jump’ trigger directional interpretations.
- 60 Based on the previous information and Talmy’s decomposition of event structure, I surveyed all the verbs which occur in the corpus with the directionals as markers of deictic orientation and classified them according to the components they lexicalise. Given Belkadi (2014)’s proposal, I paid particular attention to the lexicalisation of the Path component. The results show that there are overall two main classes of verbs modified by the directionals. The most prominent class englobes verbs of motion or verbs which describes events that are conceptualised with respect to the domain of motion, at a deeper level. In this class, the notion of Path is relevant, since most of the verbs which occur with the directionals encode Path. Yet, the lexicalisation of Path inside the verb is not obligatory as some verbs which do not encode Path may occur with the clitics. The second relevant class of verbs is the class of change of states. For Change of States, the lexicalisation by the verb of a Path, or its CoS counterpart is crucial. The results are discussed in sections 4.2 and 4.3 below.

### 4.3 Motion verbs

- 61 There is a strong tendency for the verbs modified by the clitics to be also those which lexicalise the component Path. The particular path lexicalised by the verbs may be of different shapes. The deictics are most frequently found with verbs encoding punctual transitional paths (Beavers, 2011). Punctual transitional paths have no internal structure and thus involve no duration. They simply involve two parts, a starting point and an endpoint. The verbs in the following examples all encode these types of paths.

(53) **Taqbaylit**  
 qim-nt dg uxxam a ttraǧu-nt  
 sit.PRF-3PL in house IRR wait.IMPRF-3PL  
 milmi a=**d t-awǧ**  
 when IRR=VENT 3SGF-arrive.PRF  
 ‘They stayed and waited for her to arrive.’

(54) **Tetserret** (Lux, 2013)  
 aǧ=**d i-kkom** i:n=ad  
 when =VEN 3SGM-enter.PRF house=DEM.PROX  
 uhun əd i-ddaz  
 then IRR 3SGM-tweak.IMPRF  
 ‘When came in the house, he was tweaking.’

(55) **Mali Tamasheq** (Heath, 2005)  
 əjmæp-əy =**idd**  
 flee.PRF-1SG =VEN  
 əndi =hí i-kša  
 before =1SG.ACC 3SGM-eat.PRF  
 ‘I fled before it (the lion) ate me.’

- 62 Verbs which encode punctual shaped paths might be considered to involve solely the notion of emergence. The verbs in (53) and (54) are more likely to describe events from the perspective of a deictic anchor located at the endpoint of their path. However, it is not necessarily the case that these verbs are always understood from this perspective. It is perfectly possible for someone to arrive at or enter a location which is not that of the deictic anchor, in which case the itive directional can be used. Example (55) shows this. There, the verb encodes a rapid motion away from a location. Based simply on the semantic content of the verb, which involves some kind of disappearance from a scene, one would expect the itive clitic to occur, rather than the ventive. What seems to be happening here is that the directional simply modifies the endpoint of the path depending on its proximity to deictic centre.
- 63 The directionals are also found with verbs which encode durative paths; paths which include some intermediary points, between their starting and finishing point.

(56) **Taqbaylit**

i-sub =d umɣar =im

3SGM-go.down.PRF =VENT old.man.CS =2SGF.POSS

'Your father-in-law came down (the stairs).'

- 64 The occurrence of the clitics with these verbs further shows that emergence or disappearance are secondary factors, and that the directionals really primarily modify a path. In (56) it is perfectly acceptable to use the ventive, even when the descending event does not end in the exact same location as the deictic center. Thus, if the deictic centre is, say, on the ground floor of a house, the Figure can go down from the second to the first floor. Even though, the Figure's arrival on the first floor is not visible to the speaker and hence cannot be described as involving emergence, this type of events may still trigger a use of the ventive. This shows that what is deictically specified in such cases is really the path, or more specifically a part of it deemed proximal to the location of the speaker.
- 65 Finally, although this is rare in the corpus, verbs with unbounded paths may also be used with the directionals. Unbounded paths, although they specify a particular trajectory that a Figure in motion follows, do not encode transition per se. That is they do not involve the crossing of a boundary. Thus, the verbs translated as 'to approach' and 'to pass' below respectively presuppose motion of a Figure toward or via a location which is not their inherent terminal point. The clitics do not necessarily trigger changes in the meaning of the verbs which describe a TOWARD path. With verbs expressing a VIA path though, the directionals may give rise to bounded interpretations or at least put focus on the path part which is most compatible with their deictic semantics. In (57), the part focused on is the part directed toward the location of the deictic centre. In elicitations, most speakers refuse to use =d if the 'away from' part of the path is focused on.

(57) **Taqbaylit**

y-ada =d wrgaz wyad

3SGM-pass =VEN man other

'(then) another man walked past.'

(58) Mali Tamasheq (Heath, 2005)

ohæz-æn =ádd

approach.PRF-3PLM =VEN

‘The approached together.’

- 66 Many occurrences of the directionals are also with verbs describing the motion of a Figure caused by an external Agent or derived from the motion of an Agent’s body part. Many verbs which describe events involving the induced motion of a Figure by the movement of an Agent’s body part also lexicalise a Path. These verbs are classified by Talmy (2000) as lexicalising the component PUT. PUT refers to a special kind of MOVE events, one in which the Agent’s whole body does not move. Some PUT-verbs<sup>7</sup> do not necessarily involve a cause, as in the following examples.

(59) **Ghadamsi** (Kossmann, 2013)

**t-ässúräs=ən** fässän nn-äs éyäf=i  
3SG-put:P=ITV hands of-3SG head=LOC  
‘She put her hands on the head.’

(60) **Tetserret** (Lux, 2013)

awwaṛ ɣərəd əd=**d okkəf-ək**  
morning.SG all IRR=VEN remove/AOR-1SG  
illa-n oddəɜ-adən  
wheat-PL grind/AOR  
‘Every morning, I take the wheat to grind it.’

- 67 Other kinds of PUT events may stand in relation to a CAUSE co-event. Some of the verbs describing these events also lexicalise a Path:

(61) **Ayer Tuareg** (Kossmann, 2011)

w-əyaḍ t-äčč=en w-əyaḍ  
M:P-some 3SGF-eat:A=3P:M:ACC M:P-some  
t-əssərtək =kän =du  
3S:F-make.fall:A =3P:M:ACC =VEN  
‘Some she eats, others she throws (off a cliff).’

(62) əgmäy-än a=tət=d= əkkəl-än  
try:P-3PM NR=3SF:ACC=VEN= lift:A-3PM  
‘They tried to lift her up.’

- 68 Other verbs do not lexicalise a Path but simply a CAUSE co-event. The verbs in examples (63) and (64) below lexicalise the event causing the particular motion of the Figure –respectively the urine and the meat and the okras– rather than a precise trajectory followed.

(63) **Ghadamsi** (Kossmann, 2013)

**y-äbul=az=d** esm=i  
3SGM-urinate:P=3S:IO=VENT ear=LOC  
‘He urinated in his ears.’

(64) **t-ällän=ən** Éáf-əs àlmluxiyya =ye daksəm=e  
3SF-pour.P=ITV on-3S okra-ANP:S and meat-ANP:S  
‘She poured the okra and the meat onto him.’

- 69 However, in each case the events are inferred as directed. Thus, the ‘ear’ in (63) is construed as the goal of the urine’s motion, rather than a location over which the entire event of urinating unfolds. Although directionality is not explicit in the translation provided by the source, the configuration of the entity referred to by the noun *esm* ‘ear’ makes a goal interpretation the only one available. The fact that ‘him’ is interpreted as the goal in (64) is explicit from the translation provided, since the

locative preposition *ɛáf* 'on' is translated with the English directional preposition 'onto'. Given the availability of a directional interpretation despite the verbs not lexicalising path, the examples above could be argued to involve S-framed patterns. Following Levin et al. (2009) (cf. 4.1 and 4.2.) I take directionality to be inferred here from a combination of the pragmatic context and the type of events the verbs refer to. One reason to follow this line of analysis is that, apart from the directional clitics, none of these two examples actually contain a morpheme encoding path or direction. Apart from the ventive, example (63) only contains another spatial marker: the locative clitic =*i*. This clitic, which is found in the Libyan varieties Ghadamsi and Awjilah (Kossmann, 2013; van Putten, 2014), is primarily a marker of locative grounds. Nouns hosting the clitic may be interpreted as goals, but mainly with verbs that lexicalise a path. The examples below show this. In (65) from Awjilah the manner verb 'to walk' gives rise to a locative interpretation, whereas the path verb 'to enter' derives a goal interpretation. Similar interpretations arise in (66) from Ghadamsi with the stative verb 'to be' and the directional 'to take'.

(65) **Awjilah** (van Putten 2014)  
 w=i-žigàž dsənqín=i n=ašàl  
 and=3SGM-walk.IMPRF street=LOC of=village  
 'and he would walk in the street of the village.'

y-ùna ammùd=i  
 3SGM-enter.SEQ mosque=LOC  
 'He entered the mosque.'

(66) **Ghadamsi** (Kossmann 2013)

dima óğəm ənnúk=*én*  
 always heart of.1SG= LOC

t-əlla-m

2PLM-be.PRF-2PLM

'You will always be in my heart.'

kum=əbb-əɛ daž ənnuk=*én*

2PLM.ACC=take.FUT-1SG house of.1SG=LOC

'I shall take you into my house.'

- 70 Given this, it seems that the locative in (64) is understood as a goal because the verb is associated pragmatically with directional movement. In (64), the only spatial element apart from the itive clitic is the locative preposition *ɛáf* 'on'. Again this preposition get directional readings given the right contexts.<sup>8,9</sup>
- 71 Inside the class of motion verbs are of course found and in numerous number what Talmy refers to as GIVE-verbs; verbs describing events in which an Agent MOVES a Figure into the grasp of another agent. The class of verbs also lexicalises a Path component: the transfer of the Figure into the beneficiary's grasp. Note that most verbs which involve beneficiary arguments, as discussed in previous studies, belong to that class. Finally, verbs of causative motion involving an Agent's whole body, as in example (67), are also found in high number with the directionals.

(67) **Mali Tamasheq** (Heath, 2005)

à =tt =*in s-ìs-æy*

FUT =3SGM.ACC =ITV CAUS-arrive.AOR-1SG

'I will deliver it (I will make it arrive).'

- 72 Collocations with verbs encoding the manner in which a motion event unfolds are quite rare. In the corpus surveyed, only three verbs were found to occur with the directionals, outside of elicitations. In addition to the verb *azzl* ‘to run’ (already mentioned), *ggād* ‘to fly’ and *rkv* ‘to ride’ were found. The relevant examples are presented in (68) below. Note that example (68a) involves an S-framed structure since the path is encoded by the directional preposition clitic *sər* ‘towards’.

(68) a. **Ayer Tuareg** (Kossmann, 2011)  
 as d= əgl-ǎn t-əggād =**du**  
 when VENT=GO:P-3PM 3SF-fly:P =VENT  
 =sər-sǎn tǎyalge  
 =towards-3PM EA:vulture  
 ‘When they had gone, a vulture flew towards them.’

b. **Taqbaylit**  
 di lavidat n dada, dg=s i=**d**  
 in Vedette POSS dad, in=3SG.OBL REL=VENT  
**rkv-γ**  
 ride.PRF-1SG  
 ‘It is in my dad’s car that I rode (there).’

- 73 The rarity of collocation with manner-of-motion verbs comes partly from the fact that Berber languages are V-Framed languages and pay less attention to manner in narratives. However this also may come, as predicted by Belkadi’s hypothesis (2014), from the fact that manner verbs do not lexicalise a Path component. A comparison between the verbs in (68) with *cdh* ‘to dance’ and *ɬum* ‘to swim’ (69-70) which give rise to AM interpretations when modified by the ventive, seems to support this analysis. The verbs in (68) describe events that, as described by Levin et al. (2009) involve a motion in which a Figure’s location is likely to change over time. Despite the facts that these verbs do not lexicalise a specific direction in which the events occur, and as such are not Path verbs (in Talmy’s sense), they can still be interpreted as involving motion across space, and derive a deictic interpretation of the clitics. The manner-of-motion verbs in (69-70) describe events which involve most canonically self-contained motion and thus derive an AM readings. Notice further that the verbs which do not allow a basic deictic directional interpretation of the clitics are the same as those which do not derive directional interpretation of locative PPs in most Romance languages.

(69) **Taqbaylit**  
**t-cdh =d**  
 3SGF-dance.PRF =VEN  
 ‘She danced (at a party) and came back.’  
 Not available: ‘She danced toward the DC.’

(70) **Taqbaylit**  
**i-ɬum =d.**  
 3SGM-swim.PRF =VEN  
 ‘He (went somewhere) swam and came back (to the location of the speaker or to his house).’  
 Not available: ‘He swam (towards or to the location of the speaker).’

## 4.4 Change of states

- 74 The other class of verbs occurring with the directionals is the class of change of states. This class is where there are most variations across varieties. First between =*d* and =*nn*, since =*nn* is found in this domain much less frequently than in the domain of motion. Second between varieties: in the corpus, Ghadamsi, Mali Tamasheq, Ayer Tuareg and Tetsrerret did not present many change of states and clitic compounds that did not also encode motion, apart from the variants of ‘to awake’, ‘to be born’ and ‘to cause to be born’ (e.g. 71 and 72). As discussed by Bentolila (1969) these verbs almost systemically occur with the ventive, with which they almost form semi-lexicalised expressions (‘expressions semi-figées’).

- (71) **Tetsrerret** (Lux, 2013)  
 əd =**du tə-tt-ərək**  
 IRR =VEN 3SGF-IMPRF-give.birth.IMPRF  
 tafak gud ayan  
 tribe.SG in men  
 ‘which the men’s tribe gives birth to.’
- (72) Ghadames (Kossmann, 2013)  
 nitto **y-ässəkkār=d** ənd-aruma-yis=id  
 he 3SGM-make.rise:P-VENT P-brother-3S=ANP:P  
 s anəddəm=i  
 from sleep=LOC  
 ‘He woke up his brother from (in) sleep.’

- 75 Third, at least this is the impression one gets from Tikicurt Taqbaylit and a quick glance at a few folktales from other varieties, occurrence of the directionals with change of states are accepted in elicitations, under certain circumstances to be discussed below, but do not occur inside narratives as frequently as with motion verbs. Finally, the types of change of state verbs which can be modified by the directionals differ depending on the variety. Thus Tikicurt Taqbaylit only allows modification with ambivalent stative verbs, those which can get change of state interpretations without the clitic (Guerssel 1986; Chaker 1993; Mettouchi 2004 amongst others).

- (73) a. **y-vna uxxam.**  
 3SGM-build.PRF house.CS  
 ‘The house is built’ or ‘the house got built’.
- b. **y-vna =d uxxam.**  
 3SGM-build.PRF =VEN house.CS  
 ‘The house got built’.
- (74) a. **y-ḥma yimnsi.**  
 3SGM-be.hot.PRF dinner.CS  
 ‘The dinner is hot’ or ‘The dinner became hot.’
- b. **y-ḥma =d yimnsi.**  
 3SGM-be.hot.PRF =VEN dinner.CS  
 ‘The dinner became hot.’

- 76 Verbs which do not receive inchoative interpretations without the clitics, do not get modified by the clitics as deictic directionals, but instead give rise to AM readings (cf. section 2.2).



- 77 El Mountassir (2000) shows the same constraints in Tashlhit, but there the clitic interacts with the viewpoint aspect carried by the verb in question (cf. section 2.3). Aoumer (2011) describes a pattern in the Iɛemranen variety of Taqbaylit whereby stative verbs which do not inherently lexicalise inchoativity, can be modified by the ventive when they carry imperfective semantics. She states that such verbs when in the imperfective are attributed an inchoative interpretation. They are thus treated as change of states and can be modified by the ventive directional. She does not provide any examples of this alternation, but it seems she is referring to a class of verbs known as ‘verbs of quality’ (Achab, 2012). These verbs have two particularities. First, they do not take regular subject agreement affixes. Instead they are marked by accusative clitics. Second, they only occur in the perfective (Achab, 2012; Rabdi, 2004). Achab (2012) shows that these verbs actually have inchoative counterparts, which are marked with regular subject agreement and occur in other aspectual forms, including the imperfective. While the verbs of quality cannot occur with the ventive directionals, their inchoative counterparts can. These contrasts resemble those discussed by Aoumer, and are illustrated with the examples in (75) (Achab, 2012).

(75) a. *semd =itt lqahwa =ya*  
 cold.PRF =3SGF.ACC coffee =DEM  
 ‘This coffee is cold.’  
 b. *t-ismid =d*  
 3SGF-cold.PRF =VEN  
 ‘This coffee has become cold.’

- 78 It would be tempting to analyse the possibility of using the clitics, particularly the ventive with change of states as coming only from a perception of the event they describe as involving emergence. However, the fact that verbs have to either lexicalise the change or be in the imperfective aspect in order to be modified points to a different story. And again the notion of Path can be seen to be relevant.
- 79 The link between motion and change of state domains has long been acknowledged, and change of states have been shown across the literature to share similarities with spatial paths (Lackoff 1980; Aske, 1989; Levin and Rappaport Hovav 1992; 1995; Talmy, 2000; Zwarts, 2006; Beavers 2008). One prevalent observation, relevant here, is that the V-framed vs. S-framed patterns found in motion extend to the descriptions of change of state events. Particularly there is a parallel between the lexicalisation of Path of motion and that of the result of a change of state. Thus, V-framed languages also favour lexicalisation of result inside the main verb of a clause, while expressing the manner in which the change of state enfolds in a satellite (Aske, 1989; Talmy, 2000 amongst others). The examples in (76) and (77) illustrate the differences in lexicalisation between S-framed English, and V-framed Spanish and French.

(76) a. I burned him to death.  
 b. He wiped the table clean.  
 (77) a. *Lo mataron con fuego.*  
 him they.killed with fire  
 ‘They killed him with fire.’  
 b. *Marie a nettoyé la table*  
 Marie has cleaned the table  
*avec une éponge*  
 with one sponge

‘Marie cleaned the table with a sponge.’

- 80 Given these similarities, Talmy (2000) decomposes change of state events by analogy to motion events. In change of state events, a certain property is assigned to a particular object or situation. The change of that property or situation is a state change framing event. In there, the Figure is the object or situation whose change with respect to a certain property is measured. The ground is the property itself. The activating process is the transition of the figure with respect to the ground. The core schema is the transition type and state combination. In other words, the counterpart of Path in a change of state event is the change of state itself, or result. Given that most verbs that are modified by the clitic in this domain need to lexicalise the change of state or inchoativity, again it can be seen that the notion of Path is critical to the occurrence of the directionals in this domain too.

## 5. Fictive motion

- 81 In this final section, I address the other verbs which also frequently occur with the clitics, but do not obviously fit in the two classes discussed in section 4. These verbs are the verbs describing events relating to natural phenomena and bodily secretions, verbs of acquisition of a stimulus, verbs of perception of a stimulus and vision, and verbs of emission of a stimulus discussed in various parts of this article. Most studies use the notions of emergence, appearance/disappearance or visibility/ invisibility to explain these co-occurrences (Bentolila, 1969; Aoumer 2011; El Mountassir, 2000; Fleisch, 2012; Mettouchi, 2011; Heath, 2005; Lux, 2013; Kossmann, 2011; 2013). Appearance/disappearance is certainly involved at some level. This can be observed from the high occurrence of the ventive and itive with the forms for, respectively ‘to remember’ and ‘to forget’ across Berber. Furthermore, verbs of visual perception, such as verbs of seeing and looking, display frequent uses with the ventive clitic. In such cases, the experiencer rather than the speaker is the deictic anchor. Thus, in the following examples, the ventive clitic modifies the verbs glossed as ‘to see’ and ‘to look’, even though the appearance of the stimuli is described as having occurred in a location different from that of the speech event.

(78) a. **Tamasheq** (Heath, 2005)

a-s-íkəl wə-ndín...,

SG-INSTR-trip Ma-RecAnaph...,

má-dəy-əs =ədd t-ənháy-æd?

What?-in-3SG =VEN 2S-see.RESULT-2SGS

‘That recent trip, what did you see during it?’

b. **Ayer Tuareg** (Kossmann, 2011)

a ddu= t-əswăd ba=tănăt

when VENT= 3S:F-look:P be.not:P=3P:F:ACC

‘When she looked, they were not there.’

- 82 However, other verbs with similar content behave in unexpected ways. This is the case of the Berber verb *af* ‘to find’, found in most sources looked at, but which does not necessarily always occur with the ventive and can sometimes be modified by the itive. According to the semantic content of the verb –the appearance of an entity into an

experiencer's visual space– this should not happen. Consider the following example from Ghadamsi.

(79) **Ghadamsi** (Kossmann, 2013)  
**y-úfe =n** dos ġähħa i-ttökkās  
 3SGM-find:P =ITV there Gähħa 3S:M-pull.out:1  
 əssínaka d əflelán  
 carrots and onions  
 'He found (there) Gahha pulling out carrots and onions.'

- 83 In (79), it is the particular location of the stimulus's appearance which is modified deictically by the directional. In the following example, also from Ghadamsi, where the appearance of the stimulus is the location of the speech event, as marked the deictic *da* 'here', the ventive is used.

(80) lam t-əɣǧəl-əd **t-úfe-t=d** ma-ik da  
 if 2S-haste:P-2S 2S-find:P-2S=VENT mother-2S:M here  
 'If you had been here earlier you would have found your mother here.'

- 84 I propose that the verbs under discussion represent events that are conceptualized as involving fictive motion –that is the meta-phorical or perceived motion of some stimulus or other entity along an abstract path (Talmy 2000; Slobin 2008). Like in the domain of real motion, the Path associated with fictive motion verbs is the entity which the directionals modify. In the case of *af* in Ghadamsi, a movement of the experiencer's gaze over a visual path whose starting point is the experiencer and whose endpoint is the object or situation 'found' is involved. The endpoint is the part of the path evaluated deictically. For verbs of seeing or looking, possibly of hearing too, the motion involves a fictive path whose starting point is the stimulus and whose endpoint is the experiencer. Again the end of that path is the entity modified by the directionals. Verbs of sound or stimulus emission can also be assumed to be conceptualised as involving the movement of a sound out into the speaker's sphere (the world). In Tikicurt Taqbaylit, these verbs occur almost systematically with the ventive clitic. Such verbs include *inna* 'to tell', *sffr* 'to whistle', *dsa* 'to laugh', or *yni* 'to sing'.
- 85 Events relating to natural phenomena or bodily secretions are also conceptualised metaphorically in relation to motion, as is often the case cross-linguistically (Lackoff, 1980). These metaphors are linguistically reflected in Berber, as most events describing such situations or phenomena are encoded by motion verbs. The example which follows, from El Mountassir (2000: 141), has the verb *ɣli* 'to ascend' used to describe the motion of the sun into the speaker's sphere, marked by the ventive.

(81) **Tashlhit** (El Mountassir 2000)  
**t-ɣli =d** tafukt  
 3SGF-go.up.PRF =VENT sun  
 'The sun rises.'

- 86 Similar examples are found in other Berber languages. Bentolila (1969) describes events relating to bodily secretions in Ait Seghrouchen which are encoded by verbs of motion. In the following examples, the motion verbs *ɖr* 'to go down' and *K* 'to pass, to go' are used to describe the secretions of tears and fat.

(82) **Ait Seghrouchen**

imṭawn La Ṭarn-i-D zG<sup>w</sup>aLn-inw  
 ‘Tears came out of my eyes.’  
 (83) alǧm din mu D tKu Dunt imŽan  
 ‘The camel whose fat comes out of its ears.’

## 6. Conclusion

- 87 This paper has shown that the distribution of the directionals in Berber is, in addition to the usual criteria given in the literature such as appearance/ disappearance, telicity and displacement, also governed by the lexicalisation patterns of verbs. Particularly, whether a verb lexicalises the components MOVE and Path, or describes an event for which motion and a path can be easily reconstructed from the pragmatic context seems to be relevant in the appearance of the clitics. The survey has also shown that the clitics do occur across Berber languages with similar classes of verbs, although their meanings may differ slightly, usually as they interact differently with Path. Despite these overall similar tendencies, different Berber languages also display individual grammatical paths for the directionals. It was observed, for instance, that Mali Tamasheq seems to be developing a specific grammatical category of Associated Motion, while many other Berber languages make remote uses of this function of the clitics. Similarly, the ventive, as it interacts with particular verbs in varieties of Taqbaylit, gives rise to inferences of unexpectedness and suddenness. These meanings, if they become reinforced and extended to more verbs, may generate yet again new functions for the directionals. Finally, although only briefly, it was shown that inside narratives, the occurrence of the directionals is also governed by anaphoricity and information structure notions.

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## NOTES

1. The term is borrowed from the literature on Australian and Central/ South American languages where it refers to a type of inflectional affixes occurring on verbs to signify that the event they encode is framed within a motion event (see Koch 1984; Tunbridge 1988; Guillaume 2009). The following example from Mparntwe Arrernte (Australia: Wilkins 2006), in which the Associated Motion affix is bolded, illustrates the phenomenon.

a. *angk-**artn**.alpe-ke*

Speak-Quick:do&go.back-3sg

'Quickly spoke and then went back.'

2. Here, I follow Talmy (2000) and consider the verb *jjlb* 'to jump' as a manner-of-motion verb. In terms of its aspectual properties this verb, similarly to its English counterpart, can be described as semelfactive. Semelfactives describe events which are punctual and atelic (Smith, 1991). It was suggested by one of the reviewers that being a semelfactive, this verb should be classified as a result predicate in the sense of Rappaport Hovav and Levin (2010). In the motion class, RH&L's result predicates roughly corresponds to Path verbs (cf. section 4.1.). However, they classify as result predicates only Path verbs which lexically specify a direction. 'Jump' does not specify a particular direction in the same way that 'enter' or 'arrive' do. It is indeed both possible to jump up onto something or jump down from it.

3. For space limitation the reader is referred to Belkadi (2014) for more detail about these analyses, and about the analysis of Associated Motion provided. Belkadi (2015) also provides a description and analysis of Associated Motion in a range of languages.

4. The analyses by RH&L (2010) and Beavers (2011) on which Belkadi's work is based are very reminiscent of Gehrke's analysis (2008) of locative PPs interpreted as directionals in a range of languages. Her analysis holds that locative PPs are interpreted as directionals as long as the verb preceding lexicalises incremental structure. Although the notions of incrementality and scalar structure are similar, the two analyses do not always make the same predictions: some verbs classified by Gehrke as having incremental structure are not considered to have scalar structure in these previous works.

5. Slightly adapted from Talmy (2000).

6. One of the reviewers wondered whether Path motion verbs in Berber could be decomposed into a motion root affixed with a Path morpheme (as in Latin). From a synchronic point of view, it is unlikely that the forms above could be decomposed as such. The types of affixes which occur on verbs in Berber have been well-described in the literature (see Kossmann 2007 for a recent overview). These only include agreement markers, aspectual markers, such as the imperfective *-tt-*, and valence changing prefixes, such as the passive *-ttw-*, the causative *-ss-* and the reciprocal *-m-* (and their allomorphs). From a diachronic point of view, it is quite unlikely that Berber motion verbs were at some point decomposable into several morphemes, some of which encoding path. To my knowledge no work has been devoted to the etymology of motion verbs in Berber, and little is known about the semantics of proto-Berber and earlier stages of the different



Berber dialects. However, in the data there is no recognisable common motion root or path morpheme.

7. Here I use the term PUT-verbs to refer to verbs in Berber which lexicalise the mid-level predicate PUT proposed by Talmy (2000: 38-39; 51-52). The term PUT-verbs is also used by Levin (1993: 111) to refer to a class of English verbs, including the verb *put*, which present similar semantic traits and morpho-syntactic behaviour. Although some verbs lexicalising PUT in Berber could be classified as PUT-verbs in the sense of Levin, I make no claims that the two classes are the same. This needs to be further investigated.

8. In fact, as the following examples show the same verbs in French give rise to directional readings of locative prepositions too.

Verser la soupe dans un recipient adapté.

Pour.INF the soupe in one dish suitable

'Pour the soup into a suitable dish.'

Il ne faut pas uriner sur une blessure

It NEG must NEG urinate on one wound

'You should not urinate on a wound.'

9. One could argue that the directionality is provided by the directional clitics found on the two verbs. Given the corpus consulted, it was not possible to find similar verbs occurring without the clitics. However, the argument developed in this paper is that the directionals do not derive directionality on their own. It was shown in sections 2.2. and 4.2. that these clitics derive Associated Motion when directionality is not available from another source. It is thus rather unlikely that they contribute a path, other than a deictic path.

## ABSTRACTS

Berber languages use the directionals =*d* and =*nm* to specify the deictic path of motion verbs. These clitics occur with a range of verbs from other semantic classes (e.g. change of state verbs, verbs of vision and perception), with which they can be attributed different meanings. The first goal of this paper is to provide a cross-dialectal description of these meanings. The second goal is to show the role of verbal semantics in their constructions and the overall distribution of the clitics. Adopting Talmy's framework (2000) of lexicalisation of semantic concepts, linked to the domain of space and motion, I propose that the particular meaning components lexicalised by the modified verb govern the occurrence of the clitics and their particular meaning.

Directionnalité déictique et espace en berbère. Un survol typologique de la sémantique de =*d* et =*nn*

Dans les langues berbères, la trajectoire déictique des verbes de mouvement est marquée par les clitiques directionnels =*d* et =*nn*. Ces clitiques se trouvent avec de nombreux verbes d'autres classes lexicales (ex : verbes de changement d'état, verbes de vision et perception), où différents sens leurs sont attribués. Le premier but de cet article est de présenter une description pan-berbère de ces sens. Le deuxième est de démontrer le rôle de la sémantique verbale dans la distribution des clitiques. Adoptant la théorie de lexicalisation de concepts sémantiques, liés notamment au domaine de l'espace, développée par Talmy (2000), il est proposé que le type de concepts lexicalisés par le verbe modifié gouverne la présence des clitiques et leur sémantique.

## INDEX

**Mots-clés:** directionnalité, mouvement, trajectoire, changement d'état, mouvement fictif, mouvement associé

**Keywords:** directionality, motion, path, change-of-states, fictive motion, associated motion

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