Aspect and mood in Berber and the aorist issue

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1.   Introduction

Berber, a collection of languages from the Afro-asiatic phylum spoken across various regions of North Africa ─ Egypt, Libya, Tunisia, Algeria, Morocco and countries of northern Sahara, such as Mauritania, Niger, Mali and Burkina Faso ─ displays, similarly to Arabic and other Semitic members, a nonconcatenative verbal inflectional morphology. The phenomenon has been the focus of a large body of research in Berber linguistics, and a general consensus is that it involves a general distinction between three main forms, which I will refer to as the perfective, the imperfective[1] and the aorist. Even though studies describe similar range of meanings associated with the previous forms across Berber languages, their morphosyntactic and semantic functions are still very much debated. The three forms are often argued to reflect a ternary aspectual opposition (Basset, 1952; Prasse, 1986; Chaker, 1997; Mettouchi, 2000; Ouali, 2006 amongst others). However, recent classifications increasingly take the system to involve a binary aspectual opposition between the perfective and the imperfective, and analyse the aorist as semantically empty, or as a marker of modality and mood (Bentolila, 1981; Boukhris, 1998; Galand, 1987; 2003; Kossman, 2007; 2011; Mettouchi, 2009).

In addition to the lack of a solid classification, two factors make a clear picture of the Berber inflectional system more difficult. The first is the variation arising from particular languages encoding of tense, aspect and mood/modality via a range of additional strategies including particles or special affixes. The second is the variation in the terminology used to refer to each of the verb forms, and the fact that some of the terms used do not reflect the forms' canonical semantics. The mainstream terminology, adopted by the most influential scholars in the field, refers to perfective and imperfective forms as, respectively the preterite and the intensive aorist. But the term 'preterite' associates the form, which is purely aspectual, with past tense semantics it does not encode. As for the 'intensive aorist', the term refers to the historical development of the form from the aorist by consonantal lengthening. The aorist is also in a number of influential papers referred to as an imperfective (Prasse, 1986; Heath, 2002; Sudlow, 2001), not because it encodes this type of semantics, but because it is believed to have had an imperfective meaning at some stage of proto-Berber.

The aim of this paper is to provide a description and classification of the inflectional system of Berber, focusing on these three issues. Based on the semantics on the three main forms discussed above, it will be shown that, as argued in part of the literature, verb morphology encodes an aspectual opposition between perfective and imperfective forms. The aorist, although it inherently encodes no TAM meaning, can be described as strongly associated with the expression of mood by its frequent, quasi systematic occurrence in an irrealis marking construction. Unlike most studies on the subject,

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[1]Perfective and Imperfective mirrors the French terminology 'Accompli', 'Non Accompli' proposed by Galand (2003).

which tend to concentrate on particular dialects, the analysis of the system presented here relies on data from a number of varieties. This cross-dialectal perspective has several advantages, the main one being that it contributes to a clearer description of the system. By gathering a lot of the data usually spread out across the literature, it is possible to highlight the characteristics commonly shared by the different dialects, and comparatively present the variations that occur. The terminology in this paper is adopted on semantic grounds, motivated and compared to alternative terminologies in various places.

2. Berber inflectional morphology and related issues
2.1. Preliminaries

Berber morphology is essentially nonconcatenative: inflectional semantics on the verb are realised by alternations in vocalic melody and consonant lengthening or gemination. The most influential analysis of Berber verbal morphology holds that each stem (i.e. overt form) consists of a basic lexical root made of an ordered set of one to five consonants, and some paradigm associated with grammatical aspect (Galand, 1988; Prasse, 1988; Chaker, 1990; Louali & Philipsson, 2004; Lahrouchi, 2009; 2010). This is illustrated with the examples in (1-2) from Taqbaylit and Ayer Tuareg[2].

(1)		*Aorist*		*Perfective*	
	Taqbaylit	w*a*l*i*	'will see'	w*a*l*a*	'saw'
	Ayer Tuareg	əlməd	'will learn'	əlmăd	'learned'

(2)		*Aorist*		*Imperfective*	
	Taqbaylit	flu	'will tear'	fəllu	'is tearing'
	Ayer Tuareg	əgər	'will throw'	əggár	'is throwing'

At least six verbal stems, with asymmetrical diffusions across Berber, are distinguished by morphological alternations. Three occur universally: the *aorist*, the *perfective* and the *imperfective*. Two additional stems, the *negative perfective* and *negative imperfective*, occur in negative contexts where the verb is under the scope of the negation particle *ur* 'not' and its regional variants. These two forms share similar derivational properties (Brugnatelli, 2002), but contrast in their distributions. The negative perfective is more frequently found — in almost the totality of varieties. Its imperfective counterpart is attested in many dialects, including Tuareg, Tarifit, Ghadamsi and Tumzabt[3], but is inexistent, presumably lost, in other widely spoken dialects such as Taqbaylit and Tashlhiyt (Kossman, 1989). A sixth stem, the *Perfect*, is found in a few varieties such as Tuareg and the eastern dialects Awjila and Siwi[4], undoubtedly derived from the perfective stem (Basset, 1952; Prasse, 1973; Leguil, 1986)[5]. The stems are presented in (3), and illustrated with the derivations of the Tuareg[6] verb *qql* 'to go back'.

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[2]Taqbaylit is spoken in northern Algeria in the region of Kabylie, and Ayer Tuareg is a dialect of Tuareg found in Niger. all Ayer Tuareg examples from Kossman (2011).

[3]Tarifit is spoken in the Rif region of northern Morocco, Ghadamsi in the oasis of Ghadames in Libya, and Tumzabt is found in the Mzab valley of Central Algeria.

[4]Awijila and Siwi are respectively spoken in the oases of Awijila (eastern coast of Libya) and Siwa (eastern Egypt, near the border with Libya)

[5]Oriental Berber varieties, such as Ghadamsi, Awjila, Zenaga[5] and all dialects of Tuareg, which possess richer short vowel oppositions, overtly mark stem distinctions almost systematically (Taine-Cheikh,

(3)	**Aorist**	**Perfective**		**Imperfective**		**Perfect**
		Positive	*Negative*	*Positive*	*Negative*	
	ə̀qqəl	ə̀qqæl	ə̀qqel	áqqæl	ə̀qqəl	əqqál
	will return	*returned*	*not returned*	*returning*	*not returning*	*has returned*

Stems must be affixed with agreement markers to form grammatical verb outputs. Agreement morphology follows a concatenative pattern: it is marked by prefixes, suffixes or circumfixes depending on the person and number features they encode, and varies slightly in forms across Berber. As an illustration, the agreement paradigm for the perfective *wala* 'to see' in Taqbaylit is provided in (4).

(4)	wala-**ɣ**	'I saw'
	ṯ-wala-**ḏ**	'you saw'
	y-wala	'he saw'
	ṯ-wala	'she saw'
	n-wala	'we saw'
	ṯ-wala-**m**	'you(masc) saw'
	ṯ-wala-**mt**	'you(fem) saw'
	wala-**n**	'they(masc) saw'
	wala-**nt**	'they(fem) saw'

2.2. Stem formations

Three out of the six stems, namely the two negatives and the perfect, overall display constant derivations. The negative paradigms involve substituting /i/ to some vowel(s) of their respective positive counterparts: roughly either the final vowel, any /a/ vowel or, as in Tuareg, any long /â/ (Kossman, 1989; Brugnatelli, 2002). Tuareg dialects, although they follow the same pattern, contrast in marking some verbs' negative stems by /e/ apophony.

(5)[7]	**Perfective**		**Imperfective**		
	Positive	*Negative*	*Positive*	*Negative*	
Jerba Berber[8]	ẓw**a**	ẓw**i**	ẓugg**a**	ẓugg**i**	'to go down'
Tamasheq	id**ă**l	id**e**l	tədd**a**l	tədd**i**l	'to beg'

Perfect stems obtain from the perfective by vowel lengthening (Galand, 1972; Prasse, 1973; 1988). The most widely described formation is that of Tuareg where vowel lengthening targets either the final vowel of the stem or the vowel surfacing after the first consonant, depending on the verb. On Siwi, Leguil (1986) mentions that vowel lengthening alone does not derive the stem. He presents the pair *iɣra* 'he studied' vs.

2009). However, many varieties spoken in Morocco and northern Algeria display a high number of verbs which do not involve melodic alternations across all their various stems (Cadi, 1987; Kossman, 2007).

[6]Example based on Heath's description of the conjugations of verbs in a Tuareg (also known as Tamasheq) variety spoken in Mali (2005: 342).

[7]The examples given here are extracted from, respectively, Brugnatelli (2002: 167) and Sudlow (2001: 147).

[8]Jerba Berber (also known as Djerbi) is a dialect spoken on the island of Jerba (eastern Tunisia).

iɣraya 'he has studied', in which it is the suffixation of a morpheme *–ya* onto the perfective which yields the perfect. Some examples from Tamasheq are provided in (6).

(6)   **Perfective**   **Perfect**
           os**a**   os**â**   'to come'
           dwănnăt   d**î**wănnăt[9]   'to chat'

The formation of the imperfective may involve changes in consonant quality and various vocalic patterns, but two universal and fairly regular marking strategies emerge: one is gemination of a base consonant, and the second is prefixation of /tt/ onto the base. The prefix may be accompanied by vowel and consonant alternations but not with gemination, which cannot normally interact with any other process. Leguil (1987), however, presents some cases from the Adhagh[10] variety of Tuareg where imperfective stems marked by both /tt/ and consonant lengthening exist alongside 'canonical' ones[11]. These two processes are illustrated in (7), in which imperfective stems are contrasted with aorist one. The rationale for this is that imperfective vocalic schemes have a tendency to mirror those of their aorist counterparts.

(7)   **Aorist**   **Imperfective**
      Tashawit   ẓall   **tt**ẓall   'to pray'
      Tashlhiyt   **g**ru   g**rr**u   'to pick up'

The perfective and aorist stems display more complex paradigmatic properties as they are essentially marked by vowel apophony. Variations in their vocalic realisations across Berber, and within dialects depending on the verb, render any association of either stem with a corresponding scheme virtually impossible. This is illustrated in (8)-(9) below where, for each dialect, none of the three perfective and aorist stems share the same melodic pattern. Generalisations on these paradigms are further complicated by the fact that the same vocalic patterns, *u-a*, *i-i*, *i-a*, and *a-i*, pertain to the two forms.

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[9]The root of that verb is dǝwǝnnǝt. The first /ǝ/ is not realized in the perfective, but is realized as a long and heavily accentuated /î/ in the perfect. Sudlow, from whom these examples are borrowed, explains that long and accentuated /ə̂/ is attested but very rare.
[10]Tuareg of Northern Mali
[11]The two imperfective forms in this variety are each associated with a subtype semantic meaning of the more general one associated with Imperfective, one is imperfective general, and the other is for concomitance and iterativity. The contrast between stems are illustrate below for *ǝḍǝs* 'to touch':

Aorist   **Imperfective**   **Imperfective'**
ǝḍǝs   ǝ**ḍḍ**âs   **tt**ǝ**ḍḍ**âs

(8)   *Perfective*

Taqbaylit	**a**dd**a**	'to pass'
	ɣl**i**	'to fall'
	ukr**i**	'to rob'
Tashlhiyt	ħ**a**d**a**	'to be next to'
	uz**a**	'to skin'
	iw**i**	'to bring'
Zenaga[12]	**i**ʔš**ä**	'to buy'
	äbđ**ā**h	'to walk'
	uʔg**a**m	'to run'
Tuareg	lm**ă**d	'learn'
	ăk**u**n	'be surprised'
	ărh**i**n	'be ill'

(9)   *Aorist*

Taqbaylit	dǝḥk**u**	'to tell a story'
	iḥ**i**	'to leak'
	aw**i**	'to bring'
Tashlhiyt	!**a**d**u**	'to bend'
	idr**a**s	'to be few'
	z**u**rr**i**	'to have a wide mesh'
Zenaga	**ä**ʔš**i**	'to buy'
	änk**u**r	'to stand up'
	idd**u**g	'to accompany'
Tuareg	**ă**ls**u**	'to wear'
	uk**a**n	'be be surprised'
	irh**a**n	'to be ill'

2.3.   The role of the aorist in verbal morphology

The fact that numerous paradigms are attested for the aorist and perfective stems coupled with the range of options available to derive other stems make for a very complex system. Under the view that TAM morphology involves mapping relevant vocalic patterns to a consonantal root, the correspondences between a verb and stem paradigms remain fairly unpredictable. Challenging the root-pattern view of Berber morphology, a number of accounts now consider lexical verb roots to include some of the vowels which surface at stem level (Applegate, 1970; Dell & Elmedlaoui, 1991 & 1992; Kossman, 2007; Lahrouchi, 2010). The gist of these analyses is that the underlying form of a verb optionally includes lexically determined vocalic elements. This underlying form, which surfaces as one of the TAM stems serves as the base for subsequent derivations. A minority of accounts link this base to the perfective (Dell & Elmedlaoui, 1991), however the majority agree that a verb's underlying radical actually surfaces as the aorist (Benjaballah, 2001; Louali & Philippson, 2004; Kossman, 1998; 2007; 2011; Lahrouchi, 2010). Under this assumption, the most fundamental derivation

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[12]Examples from Zenaga Berber, unless stated otherwise, are from Taine-Cheick (2009).

yields the perfective and imperfective directly from the aorist form, while further derivations produce negative stems and the perfect from either the perfective or imperfective forms.

One convincing alternative analysis is developed by Bendjaballah (2001) who demonstrates that the distinct vocalic patterns of the perfective can be predicted from those found on the aorist in Taqbaylit. The vocalic derivations, when they occur, are shown to follow the Apophonic Path Ø → I → A → U → U, proposed by Guerssel & Lowenstamm (1996) for Arabic, such that an aorist /i/ is changed into /a/ in the perfective, an /a/ into an /u/ and so on and so forth. At present, it is not clear how the apophonic path can be extended to stem derivations which involve changes in vowel length in addition to alternations in their melodies (as in Tuareg, Zenaga and Ghadamsi). However, the view that the aorist is the base of some noncontenative processes offers a more systematic and unified account (see also Kossman, 2000; 2007 & 2011). Some examples showing the apophonic derivation cited by Bendjaballah (2001 198) are given in (10).

(10)	**Apophonic step**	**Aorist**	**Perfective**	
	i→a	m**i**l	m**a**l	'to lean'
	a→u	f**a**kk	f**u**kk	'to finish'
	u→u	ʃ**u**kk	ʃ**u**kk	'to suspect'

Evidently the aorist, perfective and imperfective forms have a fundamental status in the morphology of verbs. As mentioned in the introduction, one question arising in Berber research is whether this core morphological contrast constitutes a mirror representation of the basic TAM semantic opposition in the language. In this respect, the issues of which category governs verbal inflectional semantics, and which category each paradigm represents must be addressed. In section 3, I show that the most basic opposition involved in verbal morphology is aspectual and distinguishes between perfective and imperfective forms. In section 4, I focus on the issue of the status of the aorist. I show that, although it has no inherent semantics of its own, it is strongly associated with the expression of irrealis mood.

3. Basic aspectual oppositions

The 'perfective-imperfective' terminology used so far mirrors the French 'accompli-inaccompli' adopted by many scholars, and differs from the traditional and most influential 'preterite-intensive aorist' nomenclature. The various interpretations of the two relevant stems show that they are indeed best analysed as morphosyntactic mappings of eponymous semantic categories. Under this view, it follows that the main verb opposition in Berber is governed by the category of aspect, involving a fundamental distinction between perfective and imperfective semantics. Before presenting a typological overview of their interpretative semantics, a quick word about the definition of aspect assumed in the present research is first given.

Aspect refers to situations or events from the point of view of their internal temporal structure, making different part(s) 'visible' (Smith, 1997). Since Comrie (1976), two fundamental aspects are distinguished: the perfective presents situations as single wholes, without reference to any of their subpart(s), while the imperfective focuses on

specific (sub)parts of an event, except its endpoints. These aspects also relate differently to completion and continuality. The perfective inherently expresses endpoints and, therefore is, in most languages, incompatible with continuality and incompletion, but the imperfective, which does not inherently express endpoints, is more easily associated with continuality (Dahl, 1985; Smith, 1997.

3.1. The perfective

In Berber, perfective paradigms carry the type of semantics associated with perfectivity. With dynamic verbs, they indicate termination or completion of the event described, as illustrated (11), with Taqbaylit and Gourara[13].

(11) a. **n-ruḥ**   s   axxam   n   tmǝɣra   anida   nǝ-kcǝm
         1PL-go.PRF to house   of party   where   1PL-enter.PRF

         ɣar   yiwǝt   n   txxamt.
         to   one   of   bedroom.
         'We went to the house of the party (and) there we got into a bedroom.'

    b. imǝhdin i   =s   **i-nna**   awi   =d
         other   COMP=3SG.DAT   3SG.MS-tell.PRF   bring.AOR   =VENT

         agǝmmun   n   ṭǝmẓin
         plot   of   barley
         'The other told him to bring him a barley plot.'

Verbs in the perfective are sometimes analysed as encoding past tense (Ouali, 2006; Chaker, 1989; 1995[14]), a view reflected in the 'preterite' term largely used to refer to the paradigm. It is true that the completive feature of the aspect in Berber automatically yields a past temporal inference of dynamic events. However, with verbs describing states, tense reference can be either past or present depending on the context. This temporal ambivalence of perfective statives can be taken as empirical support for the category not carrying any inherent tense meaning. Temporal ambiguity is illustrated in (12) where *tǝla* in a, is interpreted in the past because the preceding dynamic event is construed as completed, but the states in b. and c. from Taqbaylit and Tamazight are interpreted in the present.

(12) a. tamdit   ahi   nǝ-mlal   =itn   =id
         evening   that   1PL-meet.PRF =them   =VENT

         dg uxxam   n   Hassan   anida   i   **tǝ-la**   tmǝɣra
         in house   of Hassan   where   COMP   3SGF-be.PRF   party
         'That evening we met them in Hassan's house, where the party took place.'

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[13]Gourara is spoken in the Tuwat region of central Algeria.
[14]Ouali (2006) argues that the preterite marks the simple past in Berber. As for Chaker (1989, 2005), he claims that the aspectual opposition has evolved into a temporal opposition between Past (Preterite), Present (intensive aorist) and Future (Aorist) in many Berber languages (including Taqbaylit)

b. **tə-ḥma**   lqaḥwa
  3SGF-be.hot.PRF   coffee
  'The coffee is hot/ The coffee was hot'.

c. **y-zyert**   wrba
  3SM-be.tall.PRF   boy
  'The boy is tall'.
  (Guerssel (1986: 9))

A number of stative verbs are ambiguous and can also, depending on the context, receive change of state readings (Guerssel, 1986; Chaker, 1993; Achab, 2006 amongst others). In most varieties, a unique perfective paradigm modifies both types of situations. In (13) y*nnmer* 'to stick' from Tamazight can be construed either as a stative or an inchoative.

(13) a. y-nnmer   wdad   =inw   gg   wexbu.
        3SGM-stick.PRF finger =my   in   hole
        'My finger is stuck in the hole' or 'My finger got stuck in the hole'.

A few Berber varieties, however, split perfectivity into two categories: one devoted to the expression of inchoativity, the second used to refer to resultative states. The most well-known perfective splits are found in Tuareg, Siwi and Awjila, which have a dedicated resultative perfect form in addition to the perfective (Prasse, 1973; Leguil, 1986; Sudlow, 2001). Some examples are provided in (14) below from a variety of Tamasheq spoken in Burkina Faso[15]. In the first instance, *ibdăd* ('he stood up'), which surfaces in the perfective, is interpreted as a completed inchoative event. In the second example, it carries resultative perfect morphology and describes a state, construed as the result of an action. Leguil (p. 13) notes that, in Siwi, stative verbs in the resultative perfect can only describe states, and must be interpreted as inchoative in the perfective. Thus, *uṭnaɣa* the 1st person singular resultative of *uṭn* ('to be sick') is construed as 'I am sick', while the perfective form *uṭnəɣ* encodes the change of state 'I have become sick'.

(14) a. i-bdăd
      3SGM-stand.up.PRF
      'He stood up.'

b. i-bdâd
   3SGM-stand.up.RESPRF
   'He has stood up, so he is standing up.'

Perfective forms predominantly occur independently, however a small number of dialects associate them with pre-verbal particles. These elements have either aspectual functions, marking a stative-inchoative split of the perfective, or encode tense. In the Ait Sadden variety of Morocco discussed in Leguil (1986), for instance, the particle *lla* seems to be associated with 'stative' perfectivity semantics.

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[15]These examples provided by Sudlow (2001: 58) are from Tamasheq-Tuareg spoken in North-east Burkina-Faso.

(15) ufi-x   =tn   **lla ğan-ən**
      find.PRF-1SG =them PRT sleep.PRF-3PLM
      'I found them asleep.'

In Malian Tamasheq, the particle *kælá* occurs with verbs in the resultative perfective to encode past tense (Heath, 2005: 586).

(16) kælá   æmòdæn-æn
      PRT   abound.RESPERF-3PLM
      'They were numerous.'

3.2. The imperfective
The imperfective paradigm mainly refers to situations as habitual or continuous in the present or the past, but is also often used to describe repetitive events.

(17) a. tagyrəst ta tokäyət **i-ffâr**   imnas
         winter   last   3SGM-rent.IMPRF camels
         'Last summer, he used to rent camels.'
         (Tuareg in Leguil, 1987: 399)

      b. wala-γ   argaz   sufəlla   usəllum,   a   **y-ttkas**
         see.PRF-1SG man   on   ladder   PRT 3SGM-pick.IMPRF

         ttəfah.
         apples
         'I saw a man on a ladder, he was picking up apples.'

      c. ttruḥu-n   ttuγal-ən   imzikmirən   nni
         go.IMPRF-3PLM   return.IMPRF-3PLM   contractions   these
         'The contractions were coming and going.'
         (Taqbaylit)

Because of its aspectual semantics, the imperfective can only be used on verbs which refer to dynamic situations. Although many statives verbs can be inflected with the imperfective, the range of interpretations they are associated with is very limited. Mostly, the situations described can only be interpreted as involving a change of state, but in some varieties such as Tamazight, these situations can be construed as generic (cf. 18b) (Guerssel, 1986; Chaker, 1993; Mettouchi, 2004) .

(18) a. lla   **y-ttli**   ṯaq
         PRT 3SGM-be.open.IMPRF window
         The window is opening.
         *The window is open.
         (Taqbaylit)

  b. lla   **y-ttzirit**   wjlal wghyul
     PRT   3SGM-be.long.IMPRF   tail   donkey
     The donkey's tail is [typically] long.
     (Tamazight: Guerssel, 1986: 9)

In varieties spoken in Morocco (e.g. Tarifit, Tashelhyit, Tamazight) and northern Algeria (Taqbaylit, Tashawit, Gourara), imperfective stems are prominently preceded by a range of particles whose function is to encode either a particular subtype of imperfectivity or, rarely, tense. In Tikicurt Taqbaylit, for instance, two particles are distinguished. One, *ar*, appears more frequently and seems to be associated with general imperfective contexts. The second form, *lla*, tends to be primarily associated with a progressive or concomitant meaning in the present or the past.

  (19) a. i-ruḥ   γur   lḥanut   **lla**   i-ttazel
          3SGM-go.PRF   to   shop   PRT   3SGM-run.IMPRF
          'He ran to the shop. (Lit. He went to the shop he was running).'

      b. mi   pdə-γ   ideli   **lla**   i-ttawam
         when   arrive.PRF-1SG   yesterday   PRT   3SGM-swim.IMPRF
         'When I arrived yesterday, he was swimming.'

      c. uγal-əγ   kəcm-əγ   γar   taxxamt aniga
         become.PRF-1SG   enter.PRF-1SG   to   room   where

         i   **lla**   gan-əγ
         COMP   PRT   sleep.IMPRF-1SG
         'Then, I entered the room where I was sleeping.'

  (20)   **ar**   i-ttru
         PRT   3SGM-cry.IMPRF
         'He is crying, he was crying / He often cries, he cries a lot/ he used to cry.'

These particles are found in a number of other Berber languages, but may encode different imperfective distinctions. In some varieties of Taqbaylit, *ar* specifies durativity (Chaker, 1989; 1995). In Tamazight, its function is to mark ingressive or inceptive aspect, in particular the beginning of an iterative event (Boukhris, 1998). *lla* is found across northern Berber varieties carrying the same continuative and progressive meaning (Boukhris, 1998, Dell & Elmedlaoui, 1989), but also often encodes tense. In some varieties of Tamazight, the particle marks present tense, but marks the past in Tarifit (Ouhalla 2005a; Ouali, 2006)[16].

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[16] Many more imperfective particles, with more or less similar functions, have been noted in the literature, but reviewing them all is, unfortunately, outside the scope of this study.

(21) a. **lla**   =t   i-ssa
   PRT   =it   3SGM-drink.IMPRF
   'He is drinking it.'
   (Tamazight: Ouhalla, 2005: 4)

  b. **ila**[17]   ttari-n   =t
   PRT   write.IMPRF-3PLM   =it
   'They were writing it'.
   (Tarifit: Ouhalla, 2005: 4)

The imperfective split tends to involve two-fold distinctions and to be encoded by particles. Some regional dialects, however, display finer-grained imperfective distinctions. It is the case of the Zemmour dialect spoken in Morocco, described by Leguil (1986) as having, in addition to *ar* and *lla*, a third form *xa* which expresses habituality. Others, such as the Adhagh dialect of Malian Tuareg, mark distinctions between general and continuous imperfective categories morphologically (Leguil, 1987: 399):

(22) a. a =s   =t   =idd   ose-γ,
   PRT=to.him   =it   =VENT   arrive.PRF-1SG

   i-ffâr   imnas
   3SGM-rent.CONT.IMPRF   camels
   'When I arrived (at his place), he was renting camels.'

  b. tagyrəst ta tokäyət,   i-təffâr   imnas
   winter   last   3SGM-rent.IMPRF   camels
   'Last winter, he rented camels.'

The aim of this section was to show that the basic opposition in Berber, as argued in most of the literature, is based on aspect and involves a dual opposition between perfective and imperfective, with different varieties having developed different strategies to mark subtypes of these aspects. A dual analysis of the aspectual system of Berber also relies on the assumption that the aorist stem does not belong to the category of aspect. This is discussed in the following section.

4. The status of the aorist and mood in Berber

The term 'aorist' is predominantly found in research on Indo-European languages such as Slavic and Modern Greek, where it refers to verbal morphology encoding both perfective and past tense semantics (Comrie, 1976; Bubenik, 1997). In Berber, verbs modified by the paradigm canonically encode neither past nor perfective, but a range of meanings associated with aspect, tense or mood depending on the context. 'Aorist', introduced by Basset (1952:14) as an initial characterisation, originally referred to the morphological unmarkedness and semantic vacuity of the form (see also Cadi, 1987). Its predominant use in current research, however, yields from the lack of consensus on the status of the stem within the inflectional semantics system of Berber, and the difficulty

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[17]*lla* and *ila* can be assumed to be realizations of the same particle as both forms are grammaticalized from the verb *ili* 'to be'.

in classifying it. Overall, three main analyses emerge. The aorist is either analysed as an aspect (Chaker, 1989, 1995, Heath, 2005), a marker of modality (Galand, 1987; 2003) or a non-inflected form (Penchoen, 1966; Bentolila, 1981; Boukhris, 1998). In this section, I focus on the semantics of the aorist in its various structures across Berber, and show that the apparent range of contexts in which it occurs can be reduced to two: (i) any construction in which a non TAM inflected verb is required and (ii) the expression of irrealis mood within the *ad aorist* complex. This means that the stem carries in itself no TAM semantics (as similarly proposed by Bentolila and Boukhris), but by its very frequent occurrence with the *ad* particle, has come to be associated with the category of mood.

4.1.   The irrealis semantics of *ad aorist* forms
The most widespread, probably universal, context in which the aorist is found in Berber is preceded by the particle *ad* (shorten form *a*) or its dialectal variants — amongst others, *äđ* in Zenaga (Taine-Cheikh , 2009), *ga* in Siwi and Ait Seghrouchen (Leguil, 1986; Bentolila, 1981), or *ze/he* in Ayer Tuareg (Kossman, 2011). The *ad aorist* complex is very often associated with future interpretations, but also occurs in narratives substituted to the imperfective in descriptions of repetitive or habitual events, and more rarely expressing epistemic modality. These various meanings are illustrated in the following Gourara and Taqbaylit examples.

Future

(23) a. nhaṛ   yəwṣəl   ṭaɛwa   ad   i-raḥ   bba =ns
          when   time   marriage   PRT   3SGM-go.AOR father =his

          γa   yaj   =ns   a   =s   i-ṭləb   tafaxəṭ
          and   mother   =his   PRT =to.him   3SGM-propose.AOR   girl
          'When he's old enough to marry, his father and mother will propose to a girl (for him).' (Gourara, Bellil: 11)

      b. ad   t-zəwwəǧ   azka
          PRT   3SGF-marry.AOR   tomorrow
          'Miriam will get married tomorrow.'(Taqbaylit: own data)

Habituality

(24) a. sag   lɛam a =s   =d   awy-ən   assay
          every   year PRT=to.him =VENT   bring.AOR-3PLM present

          ulem   n ziyarət
          charge   of camel
          'Every year, they would bring him presents the size of a camel charge.'
          (Gourara, Belil: 149)

b. a   n-ruḥ   a   nə-lqəd   azemmur
   PRT   1PL-go.AOR   PRT   1PL-pick.up.AOR   olives

a   nə-ččar   iqəcwalən   n   uzəmmur
   PRT   1PL-fill.AOR   baskets   of olives
   'We would go pick up olives, we would fill up baskets of olives.'
   (Taqbaylit: own data)

Epistemic modality

(25) ad   t-af-əd   dgg   wxxam
      PRT   2SG-find.AOR-2SG   in   house
      'You may find him in the house.'(Taqbaylit: Chaker, 1989: 975)

Most of these meanings are found across Berber languages, and unanimously agreed on in the literature. However, there is consensus on neither the morphosyntactic function of the form or on the compositional role of the two elements in the semantics of the complex. Aorist-with-particle structures are simultaneously argued to belong to the domain of tense, aspect or modality. Chaker (1989; 1995) argues that they are aspectual and mark a 'non-effective' type of aspect whose function is to describe events that are considered not to have concrete existence. On the other hand, the complex is often argued to mark modality (Bentolila, 1981; Prasse, 1986; Galand, 1977; 1987; 2003). Galand argues that the aorist independently expresses modality while *ad* only specifies its modal meaning. Bentolila (1981) proposes a kind of real-non real[18] split of the Berber system, with the *ad aorist* corresponding to non-real modality, marked by the particle alone (see Kossman, 2011 for a similar proposal). Finally, Boukhris (1998) analyses the particle as a marker of future tense which, depending on the value assigned to the aorist complex by the context, may also be associated with a modal meaning.

Adopting the approach developed in Belkadi (2010), I believe that *ad aorist* forms express across Berber the category of mood. Indeed, there is common agreement that the complex consistently expresses the non-existence or non-actuality of the situation under description. Factual vs. non-factual distinctions of this sort belong to the domain of mood rather than to the domain of aspect which refers to the temporal structure of events or to the domain of modality more closely linked to the speaker's or agent's attitude towards the proposition or situation described (Palmer, 1986). Principally, in those contexts, the aorist along with its *ad* particle is associated with irrealis, a mood referring to events or situations which are non-factual or unreal (Lynch, 1998; Shankara Bhat, 1999; Cinque, 1999)[19].

Across languages where it is grammatically marked, the irrealis is found like *ad aorist* forms in the expression of future, and quite interestingly, is frequently used in the description of habituality in the past. According to Palmer, the use of irrealis in the description of past habitual events is not uncommon and probably results from the fact that habitual past does not necessarily describe or pinpoint to a particular action but, rather to a 'tendency to act' (i.e. habitual past often describes action that would have been done in the past). Furthermore, the irrealis surfaces in the expression of moods

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[18] In French 'Reel vs. non reel'
[19] See Mettouchi (2009) for a similar approach.

such as the conditional, the imperative or the hortative (Palmer (2001: 145-185) and, typologically, occurs frequently as a marker of purpose clauses (Schmidtke-bode, 2009). As shown below, these contexts are also ones in which the aorist is found in Berber:

Purpose clauses

(26) a. nukni n-sub   s asalu   aken <u>a   n-təs</u>
       us/we 1PL-go.down.PRF to living room for PRT 1PL-sleep.AOR
       'Us, we went down to the living room to sleep.'(Taqbaylit)

    b. ri-x   <u>ad   ruhe-x</u>
      want.PRF-1Sg PRT go.AOR-1Sg
      'I want to go.' (Tarifit: Ouali, 2006: 50)

Conditional

(27) lukan   cucf-əɣ   svaḥ   ad   ili-ɣ   trankil tura
     if   wash.PRF-1SG morning PRT be.AOR-1SG free   now
     'If I had showered this morning, I would be free now.' (Taqbaylit)

Optative

(28) ad   i-quš
     PRT 3SGM-be.destroyed.AOR
     'May he be destroyed!'(Taqbaylit: Chaker, 1989: 975)

The aorist stem is, by its frequent occurrence in *ad aorist* structures, highly associated with irrealis mood, but does not seem to play a compositional role there. As proposed by Bentolila (1981) and Kossman (2007; 2011), it is more likely that mood semantics is provided in such structures by the particle alone. This analysis of *ad* as the marker of irrealis is supported by its distribution across Berber languages.

First, the particle is found, in many varieties, co-occurring with imperfective verbs and, in such contexts, adds an irrealis meaning to the description of the event. In the following examples from Taqbaylit (Chaker, 1983: 223) and Tuareg (Kossman, 2011), the imperfective verbs which individually describe the habitual events of sleeping and flying, are preceded by the particle *ad* and semantic interpretations of non-factuality are derived.

(29) a. ma   y-whš   **ad** y-ggan   ɣur   =nɣ
      if   3SGM-be.scared.PRF PRT 3SGM-sleep.IMPRF to   =our
      'If he is scared, he will sleep at ours (habitually).'

    b. **ad** t-ətággăd-ăm   fãwdă
      PRT 2PLM-fly.IMPRF-2PLM always
      'You will/ would always fly.'

The second piece of evidence comes from varieties where, in addition to *ad*, aorist stems can co-occur with another particle, such as *rad* in Tashelhit, *da* in Tamazight and *sad* in Tarifit (Chaker, 1995; Kossman, 1997; Ouali, 2006). In such languages the

distributions of the particles always follow this pattern: the alternative particle is restricted to the expression of future tense while *ad* is used in the expression of moods. The couple of examples in (30) from Tamazight (Ouali, 2006: 6&50) illustrate these properties.

> (30) a. da   du-x   gher rabath aska
>   PRT   go.AOR-1SG   to   Rabat   tomorrow
>   'I will go to Rabat tomorrow.'

> b. ri-x   ad   ruhe-x
>   want.PRF-1Sg   PRT   go.AOR-1Sg
>   'I want to go.'

The role of the aorist in the *ad aorist* complex will be further discussed in section 4.3. Before that, a description of the contexts in which the aorist occurs without particle is given in the following section.

4.2. The aorist without particle
Without particle, the aorist is found in few structures, not displayed by all Berber languages, and can be interpreted with either tense, aspect or mood semantics. Some dialects spoken in Morocco and northern Algeria use the form in the expression of imperative mood[20] (Kossman, 2000; Mettouchi, 2009).

> (31) a. qqim!
>   sit.AOR
>   'Sit! (Taqbaylit, own data)

> b. sqad   =as   tabratt!
>   send.AOR   =him   letter
>   'Send him the letter!' (Tarifit: Ouhalla, 2005: 8)

More rarely and, it seems in fewer varieties, bare aorist forms are also found in sentences which contain an adverbial clause, where they appear to be interpreted with irrealis mood semantics. Such occurrences are reported in Zenaga (Taine-Cheikh, 2009: 254) in contexts involving the temporal and contrafactual adverbs *oʔgₐd̄ar* 'when' and *ham* 'if'.

> (32) a. oʔgₐd̄ar   y-ämmih   äʔžžir, arzumä-g   =ki
>   when   3SGM-finish.PRF month   pay.AOR-1SG   =2SGM.ACC
>   'When the month is over, I will pay you' or 'When the month is over, I pay you.'

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[20] Many dialects have special imperative forms. It seems to be the case in most varieties of Tuareg (Prasse, 1973, 1986; Heath, 2001; Kossman, 2011 amongst others), and in Zenaga (Taine-Cheikh, 2009). In such instances, verbs appear with reduced agreement morphology as only second person plural features are overtly marked.

b. ham-iʔh   yənšä-g   azərfi,   äkf   =aʔk   =ti
   if   possess.PRF-1SG   money   give.AOR   =2SGM.DAT=3SGM.ACC
   'If I had money, I would have given it to you' or 'If I have money, I will
   give it to you.'

The most prominent bare aorist construction, however, is the so-called 'aorist enchainé' (henceforth chained aorist), found in Tarifit, Tashlhiyt, Tamazight, Zenaga, and some Taqbaylit and Tuareg dialects (Bentolila, 1981; Leguil, 1986; Galand, 1987; 2003; Boukhris, 1998; Taine-Cheikh, 2009). Chained aorist refers to a sequence of clauses which, apart from the initial one, have their main verb in the bare aorist. In non-initial clauses, the aorist is interpreted with the same TAM features as those of the first verb, which may surface in the perfective, the imperfective, the aorist with particle, and, in the varieties that have a dedicated form for it, the imperative (Bentolila, 1981; Galand, 1983; 1987; Boukhris, 1998). The examples in (33) from Tashlhiyt (Galand, 1987: 367-368) illustrate these properties. In a, the first verb is in the imperfective, describing a habitual event, and the three following aorist stems are interpreted with identical aspectual semantics. The examples in b. and c. present similar characteristics with a perfective and an aorist with future particle *rad* in initial position.

(33) a. ar   =d   **t-ttasi**   tumẓin,   <u>t-frn</u>   =tnt,
   PRT   VENT   3SGF-take.IMPRF   barley.PL   3SGF-sort.AOR   =3PLF.ACC

   <u>t-Sli</u>   =tnt,   <u>t-awi</u>   =tnt   s   uzrg
   3SGF-grill.AOR   =3PLF.ACC   3SGF-take   =3PLF.ACC   to   mill
   'She takes the barley, clean it, grill it (and) carries it to the mill.'

b. žḥa   **i-fta**   s Suq,   <u>y-awi</u>   =d   gis   sin
   Jha   3SGM-go.PRF   to market,   3SGM-take.AOR   =VENT   with.him   two

   ṛṭal   n tfiyi,   <u>i-fk</u>   =tn   i   tmġart   Ns
   pounds   of meat   3SGM-give   =3PLM.ACC   to   wife   his
   'Jha went to the market, brought two pounds of meat with him (and) gave them to his wife.'

c. **rad**   suq-ġ,   <u>Znz-ġ</u>   =t   =in
   FUT   go.to.market.AOR-1SG   sell.AOR-1sg   =3SGM.ACC   =ITIVE
   'I will go to the market (and) will sell it (away).'

Chained aorist verbs essentially occur in clauses that are not in any syntactic dependency. As in (33), the clauses are then not linked by markers of subordination and simply follow one another. Bentolila (1981) describes two chained aorist contexts which seem to involve syntactic dependencies in Aït Seghrouchen Berber (Morocco). The first are clauses following *aha* 'here' and *day* 'then':

(34) a. **La Tmɛašaṛ-n** aha t-ɛdl lmɛišt nsn
IMPRF live.together.IMPRF-3PLM and 3SGF-be.good.AOR life of.them
'They live together and their life is good.'

b. **i-ḥasb** =as (...) day i-ž=tnt ḥ=s qaḥ
3SGM-count.PRF =3SG.DAT and 3SGM-mark.AOR name=his all
'He counted (the animals) for him, and marked them all under his name.'

The second context consists of clauses preceded by what Bentolila describes as a modifying adverbial clause. In (35) below, verbs following the clause introduced by *aDay* 'when' or *zGa* 'as soon as' occur in the bare aorist, and again are interpreted with the same semantics as the initial verb[21].

(35) a. aDay =t **n-ġn**, žn =t i lɛafit
when =3SGM.ACC 1PL-kill.AOR put.AOR =3SGM.ACC to fire
'When we kill it, we put it in the fire.'

b. zGa **i-ṛaḥ** yizm, i-ġz ufqiṛ
as.soon.as 3SGM-go.PRF lion 3SGM-dig.AOR old.man
'As soon as the lion left, the old man dug a hole.'

4.3. The duality of the aorist: a preliminary analysis

The fact that only *ad* marks irrealis mood in the *ad aorist* complex and that the various meanings the aorist gets without particle are inherited from a previous verb or clause supports an analysis attributing no semantic or morphosyntactic value to the aorist stem. Many descriptions of the aorist as a semantically empty form have been proposed in the literature (Penchoen, 1973; Bentolila, 1981; Cadi, 1988 amongst others), but only one has been developed into an analysis. Boukhris (1998), adopting the concepts of minimalist syntax, argues that the aorist verb carries no inherent TAM morphology, and as such is syntactically deficient and dependent. In order to be interpreted, and thus overtly realised, it must occur in a special configurational relationship with an inflected verb. In particular, it must be c-commanded[22] by a perfective, imperfective or aorist with particle, and alternatively by *ad*, from which it acquires semantic value. According to this analysis, the aorist verb *tsw* 'she drank' in (36a) acquires a perfective interpretation by the c-commanding perfective verb *tukm* 'she entered', and the verb *iddu* 'he will go' acquires a future tense interpretation from the particle *ad* in (36b).

(36) a. **t-ukm** t-sw aman
3SGF-enter.PRF 3SGF-drink.AOR water
'She entered and drank water.'

b. **ad** i-ddu
PRT 3SGM-go.AOR
'He will go.'

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[21] Bentolila provides very little information on the origins and functions of the 'conjunctions' and adverbs presented above, and it is possible that these elements do not actually mark any syntactic dependency. Without further information, I will assume that they indeed mark subordination.

[22] 'C-commanded' in Boukhris's argument can be defined as 'preceded and dominated' in a syntactic tree.

This analysis accounts for the dependence of the aorist in some structures, but not in others. Indeed, bare aorist verbs may inherit TAM features from verbs by which they do not appear to be c-commanded, precisely in coordinated and adverbial subordination contexts. Moreover, the form is used in many languages as an imperative marker, and in such instances, occurs independently (cf. Section 4.2). But the main problem with Boukhris's account is that it fails to address the important question why it is the aorist which occurs in the particular structures it does. In several of these contexts, the aorist is indeed favoured to other possible verb stems. The *ad* particle, for instance, can also occur with imperfective forms, but occurs with the aorist stem more frequently. Similarly, in structures involving bare aorist forms, particularly the chained aorist, using perfective, imperfective or aorist with particle instead leads to subtle meaning, and possibly syntactic, alternations discussed below. Here, I propose an alternative hypothesis which predicts the contexts where aorist verbs must occur. The tentative analysis is based on the properties of chained aorist structures described in the literature, and the historical development of the *ad aorist* proposed by Chaker (1995). It proposes that, although the aorist is empty semantically in both constructions, the two structures may have developed from two different original uses of the stem, and involve the aorist for different factors. I start by discussing some characteristics of chained aorist constructions, and factors governing the use of the aorist there.

The morphosyntactic properties of the chained aorist have never been investigated; as a consequence, it is difficult to make any conclusion on the exact nature and function of the construction. However, it seems to share a few prototypical characteristics of two related phenomena, namely clause-chaining and serial-verb constructions. Clause-chaining, like most instances of chained aorist, typically involves sequences of clauses, following one another without markers of coordination and subordination marking a dependency between them (Watanabe, 1994; Kroeger, 2004). In such constructions, only one verb — usually the last in the series — appears fully inflected with TAM features, while all the others occur in unmarked forms. Serial-verb constructions can be defined as series of verbs occurring in a single clause and functioning together as single predicates. Aikhenvald (2006) describes various typological characteristics of the construction, two of which are displayed by the chained aorist. First, in some languages, only one of the verbs in the series carries TAM inflections, while the others occur in uninflected forms. Second, all verbs involved must together describe a single event. Crucially, the clauses involved in chained aorist, whether syntactically dependent or not, must also be semantically related.

Bentolila (1981: 151-171) provides an extensive corpus of chained aorist constructions in Ait Seghrouchen Berber (Morocco), and their associated semantic interpretations. He concludes that chained aorist structures are used to highlight a link between the various actions described in the clauses involved. In fact, from the examples he provides, it seems that like serial-verb constructions, the event described by each verb in a chained aorist sequence must be interpreted as a subpart of a more general single one. In each of the previous sentences, the sequences of events described can be culturally or pragmatically related to one another, and understood as forming together one general event. For instance, the actions of cleaning, grilling and carrying barley to the mill in (30a) repeated in (37) are part of a regular process for making barley flour, and as such are culturally associated.

(37) ar   d   **t-ttasi**   tumẓin,   t-frn   =tnt,
      PRT   VENT   3SGF-take.IMPRF   barley.PL   3SGF-sort.AOR =3PLF.ACC

      t-Sli   =tnt,   t-awi   =tnt   s   uzrg
      3SGF-grill.AOR   =3PLF.ACC   3SGF-take   =3PLF.ACC   to   mill
      'She takes the barley, clean it, grill it (and) carries it to the mill.'

Series of verbs which describe sequential events not canonically conceived as related, cannot occur in chained aorist constructions. In the following example, the bare aorist is excluded, and each verb following the initial one must be in the imperfective. This is because the various events of walking, going around houses and dancing (habitually) are not culturally perceived as forming a canonical single event.

(38) La   TFġ-n,   La   Gur-n,
      IMPRF   go.out.IMPRF-3PLM IMPRF   walk.IMPRF-3PLM

      La   TK-n   tudrin   (…), La   Sqrqub-n,
      IMPRF   pass.IMPRF-3PLM   houses   IMPRF   knock.on.door.IMPRF-3PLM

      La   Tadf-n,   La   TG-n   dis   aḥidus ġ-užns (…)
      IMPRF   go.in.IMPRF-3PLM   IMPRF   dance   in.it aḥidus ?
      'They go out, walk, go around all the houses, knock on their doors, dance the aḥidus inside them (…)'

Substituting another stem, such as a perfective or imperfective, to a chained aorist gives rise to change in meaning. The second clause in example (39b), similar to (32b, repeated in 39a), involves a perfective instead of a bare aorist. Whereas the event of the old man digging a hole can only be understood as occurring directly after the departure of the lion with the aorist, it can occur after a more or less important extent of time in b, with the perfective.

(39) a. zGa   **i-ṛaḥ**   yizm,   i-ġz   ufqiṛ
          as.soon.as 3SGM-go.PRF   lion   3SGM-dig.AOR   old.man
          'As soon as the lion left, the old man dug a hole.'

      b. zGa   i-ṛaḥ   yizm,   i-ġzu   ufqiṛ
          as.soon.as 3SGM-go.PRF   lion   3SGM-dig.PRF   old.man
          'After the lion left, the old man dug a hole.'

Furthermore, serial-verb constructions may fulfil a range of other semantic functions, and in many languages, are used to express TAM information. As shown by the following examples, the chained aorist is also used in Berber to fulfil this function. Thus, in the chained aorist presented in (40b), the verb *kr* 'to stand' provides an inchoative aspectual meaning, but is used with its full lexical meaning in (40a) which does not involve a chained aorist.

(40) a. i-Kr   i-žu   azGʷaġ
          3SGM-stand.PRF   3SGM-be.PRF   red
          'He stood, he was red.'

     b. **i-Kr**   i-ž̲   azGʷaġ
          3SGM-stand.PRF   3SGM-be.AOR   red
          'He became red.'

The argument developed here is not that the chained aorist is a type of serial-verb construction or clause-chaining. Again, not enough detail on their morphosyntactic properties is available, and if the structure can indeed be used in coordinated and subordinated contexts, then it most probably is not. However, the similarities of the chained aorist with these two types of structure can guide an analysis of the aorist. From these shared properties, it is obvious that the chained aorist involves series of verbs, most probably occurring within different clauses, but semantically behaving as single predicates. In these structures, as in many verbal and clausal serializations, only one of these verbs, the initial one, can be fully inflected. All other verbs must be uninflected, but share the TAM values of the initial verb. The aorist is therefore used in such structures because it is the only morphologically uninflected form available in Berber. The factor making the aorist prominent in chained event narrations appears to be therefore morphosyntactic: any syntactic context requiring a morphologically uninflected form will involve a bare aorist. This hypothesis is further supported by the use in some dialects of bare aorist forms in imperative constructions discussed in section 4.2 (the relevant examples are repeated below for convenience).

(41) a. qqim!
          sit.AOR
          'Sit!' (Taqbaylit, own data)

     b. sqad   =as   tabratt!
          send.AOR   =him   letter
          'Send him the letter!' (Tarifit: Ouhalla, 2005: 8)

Given the typological tendency of imperative verbs to surface as bare forms without inflection, agreement or particles, it can be assumed that the aorist is chosen in those contexts, again, because it is the morphological default of Berber. Now, the frequent occurrence of the aorist in the *ad aorist* complex despite its lack of compositional function cannot be explained by the syntactic requirement for a morphologically empty verb form. The main argument against this analysis is that TAM particles in Berber are compatible with inflected verb forms, such as the imperfective and, rarely, the perfective (cf. Section 3). As observed in section 4.1, the particle *ad*, itself, can also modify the imperfective. The close relation between *ad* and the aorist can be better explained by the historical development of the complex. In the remainder of this section, I tentatively describe this hypothesis.

One solid assumption on the aspectual system of proto-Berber is that it involved a basic opposition between the perfective and the aorist, believed to have carried a general imperfective meaning (Leguil, 1986; Prasse, 1986; Chaker, 1989; 2005; Galand, 1987).

What is referred to in this paper as the imperfective stem, and *ad* are said to have both emerged as later innovations. The imperfective is believed to have developed from the aorist to express a more specified durative and iterative meaning. Furthermore, as argued by Chaker (1995), the fact that it is consistently found across varieties supports an emergence of the form occurring in proto-Berber. In parallel, the aorist became to be associated with the particle *ad* to express irrealis mood, presumably because its imperfective semantics was more compatible with irrealis than the perfective. Because the *ad aorist* complex (and dialectal variations) is also consistently found across Berber, the construction can be similarly taken to have emerged in proto-Berber. As the imperfective developed into the main counterpart of the perfective, the aorist lost its primary imperfective meaning and its function in the aspectual opposition of the Berber system. But its association with the particle *ad* being already fairly established and widespread, it remained in the complex marking irrealis mood. This analysis relying on a historical association between *ad* and the aorist in the expression of irrealis mood is further supported by the varieties where a future particle occurs in complementary distribution with *ad*. Indeed, these items almost systematically correspond to a variant of *ad* (e.g. the *əd* of Ghadames (Kossman (2007)) or to a grammaticalized verb including the particle (e.g. the *rad* of Tashelhit formed by a grammaticalized form of the verb *ira* 'want' and *ad* (Chaker, 1997)).

According to the hypotheses developed here, the uses of the aorist in Berber come from two of its characteristics: (i) its status as the morphological default form of Berber and (ii) its imperfective semantics in proto-Berber. Thus, in all contexts where an uninflected form is syntactically required, such as the imperative and chained aorist constructions, the aorist is chosen because it is morphologically empty. With *ad*, the aorist is historically associated in the marking of irrealis mood, probably chosen to occur there because of its imperfective semantics in proto-Berber. This explains why it most frequently occurs with the particle, and others derived from *ad* to express future.

5. Conclusion

The semantic behaviour of the three main stems across dialects shows that the Berber aspectual system should be analysed as mostly based on a binary opposition between perfective and imperfective. As in other languages where the distinction exists, perfective corresponds to complete descriptions of events (i.e. descriptions that do not portray the internal temporal structure of an event) while imperfective descriptions portray specific internal parts of the event's temporal structure. Different varieties of Berber have developed strategies to mark further perfective or imperfective distinctions. And although the strategies may differ, the restrictive meanings they encode appear to be similar across varieties. Furthermore, given the proposed association between the aorist and irrealis mood, Berber languages seem to have an opposition between realis and irrealis moods, although only the irrealis mood is specially marked (realized as the *ad aorist* form).

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