The grammaticalization of directional clitics in Berber

Keywords: grammaticalization, motion verb, deixis, directional, demonstrative.

Résumé: L'objectif de cet article est d'évaluer deux hypothèses de grammaticalisation pour les clitiques dits "d'orientation" du berbère, dd et n: l'une est que ces particules viendraient de la grammaticalisation par réanalyse d'un verbe de déplacement et d'un verbe de dire, respectivement; l'autre de la grammaticalisation par analogie de démonstratifs nominaux. Après l'analyse de ces clitiques en kabyle, puis dans d'autres langues berbères (Siwa, Djebel Nefoussa, Ghadamès, Tamacheq du Mali) il est montré que la seconde hypothèse est plus plausible, mais qu'une grammaticalisation plus complexe, en réseau, n'est pas à écarter.

In many languages, as shown cross-linguistically in Heine and Kuteva (2002), or for Chadic languages by Frajzyngier (1987), ventive verbs often are the source of ventive markers in grammaticalization processes. Berber languages are, like Chadic ones (Mettouchi et al. to appear), characterized by the extensive use of proximal verbal extensions, and to a lesser extent, distal ones. In this perspective, the aim of this paper is to examine two hypotheses for the source of the grammaticalization of the ventive/proximal verbal extensions encountered in all Berber languages, namely motion verb ddu ('go with', 'accompany') and verb of saying ini ('say', 'tell') on the one hand, and demonstratives on the other hand.

In order to do that, the functions of directional clitics have to be precisely defined, and their grammaticalization investigated. Both investigations are linked, since Berber languages have virtually no written tradition, and it is therefore necessary to resort to cross-linguistic comparison within the family to establish grammaticalization paths.

The first part of the paper describes the system of directional extensions in Western Kabyle, where it is extensively used. It demonstrates that movement towards the speaker is not the core meaning of the ‘ventive’ clitic, whose function is rather to underline the viewpoint of the speaker or a protagonist; similarly, movement away from the speaker is not the function of the ‘andative’ marker, which actually indicates that the situation is construed according to the addressee’s viewpoint. The second part compares this system to that of other Berber languages spatially and typologically different from Western Kabyle: Nefusi, described by Beguinito to whom this paper is dedicated, as well as Ghadamsi, Tamashek, and Siwi, thus establishing the general distribution of proximal and distal clitics in the whole Berber-speaking area. The third part provides grammaticalization hypotheses for the system of directionals.

1. The directional system in Western Kabyle

1.0. Syntax of the directional clitics in Western Kabyle

The directional clitics in Western Kabyle have the form =dd or =n if preceded by a vowel, and the form =idd or =in if preceded by a consonant.

If the clause contains a mood (negative or potential) particle, or a relative marker, or a temporal conjunction, the directional clitic, together with all the personal clitics (dative and absolutive), are cliticized to that particle/marker:
‘He didn’t give it to her/him’ (Western Kabyle)

If the clause does not contain any of those markers, then the directional clitic, together with all the personal clitics (dative and absolutive), are cliticized to the verb:

(2) j-fka=jas=t=idd
SBJ3SG.M-give\PFV =DAT3SG=ABSV3SG.M=PROX
‘He gave it to her/him’ (Western Kabyle)

This situation holds for the majority of Berber languages\(^1\), except those where the system of directionals is disappearing such as Siwi: in that case the clitic tends to remain attached to the verb and no longer climbs to the head of the clause:

(3) ga t-us-ǝd
POT SBJ3F.SG-arrive\AOR-PROX
‘She will come’ (Siwi, Laoust 1931 :136) (interlinear glosses A.M)

1.1. Traditional presentation

The usual presentation of the system, either traditionally (Basset & Picard 1948) or didactically (Naït-Zerrad 2001) is as follows: Berber has two morphemes that attach to verbs (or to mood-negation-relativization particles): one that indicates movement towards the speaker (\(=dd\)), and one that indicates movement away from the speaker, or to a place evoked by the interlocutors (\(=n\)).

Thus, examples such as (4) and (4\(^\prime\)) are provided:

(4) i-ruh=dd
SBJ3SG.M-leave\PFV=PROX
‘He came’ (Western Kabyle)

(4\(^\prime\)) i-ruh=n
SBJ3SG.M-leave\PFV=DIST
‘He went’ (Western Kabyle)

The first problem with that presentation is that the opposition is not binary but ternary: verbs often appear without an extension (\(=dd / =n / \emptyset\)). Moreover, the distal clitic is by far less frequent (0,1% of the clauses, as opposed to 23% (in narratives) and 36% (in conversation) for the proximal clitic in my Western Kabyle spoken corpus). Furthermore, many verbs bearing those extensions are not motion verbs. Several authors have pointed at those facts in various publications: Marcy (1939), Galand (1959), Bentolila (1969), Aït Ahmed (1992), Mettouchi (1998), El Mountassir (2000), Fleisch (2007 and 2011), Aoumer (2008 and 2011).

Therefore, one has to study the situation in much more detail, in order to account for such examples as the following:

(5) ur=dd zwiğ-ɣ alamma t-kks=dd

\(^1\) Sometimes as in some dialects of Tamashek the directional clitic is used twice with mood-negation-relativization particles: it appears both on the particle and on the verb itself.
1.2. The distal verbal clitic =\(i\)n

This clitic, which appears in 0.1% of the clauses in my corpus, is always used in interactive contexts involving situations where an action is viewed from the perspective of the addressee. Indeed in (6) and (7), distance is not at play since in (7), A\(\dot{s}\)mar is holding the donkey, and in (6) the door is in front of the speaker. In both cases, absence of directional clitic would have resulted in a neutral command, while the use of clitic \(=dd\) would have underlined the fact that the command is to be realized for the benefit of the speaker, thus making it more peremptory. In contrast to that, the use of clitic \(=n\) implies reverence from the speaker towards the addressee (translated by 'please').

(6) i-\(\text{nna}=\text{jas}\) lli-\(\text{t}=\text{in}\)
SBJ\(3\).M-say\PFV=DAT\(3\).SG open\AOR\IMP\(2\).SG=ABSV\(3\).SG.F=DIST
‘He said please open it (the door),
d\in\(\text{nbgi}\) n \(\text{rbbi}\) /
COP guest\ABS.SG.M GEN god /
I'm (lit. it is) a beggar’. (Western Kabyle)

(7) a \(\text{\(\dot{s}\)mar}\) sars=\(\text{iji}=\text{n}\) /
VOC a\(\dot{s}\)mar be\_placed\:CAUS.AOR.IMP\(2\).SG=ABSV\(1\).SG=DIST /
‘Amar please put me down!’ (The ogress was put on a donkey by A\(\dot{s}\)mar) (Western Kabyle)

This clitic is often used for polite questions, such as (8):

(8) ad=k=\(\text{in}\) \(\text{ru}\)=?\(\text{y}\) ?
POT=DAT\(2\).SG.M=DIST add\:AOR-SBJ\(1\).SG ?
'Shall I add some for you?' (offer to add some water in someone's glass) (Western Kabyle)

And when it is used with a motion verb in the third person, it underlines the fact that the movement is directed towards an endpoint construed as known or evokable by the addressee, and in the case of (9), explicited by the prepositional phrase \(ar\:\text{\(\ddot{f}\)ix}-\text{iw}\):

(9) ad=\(\text{n}\) t-\(\text{ruh}\) ar \(\text{\(\ddot{f}\)ix}-\text{iw}\) /
POT=DIST SBJ\(3\).SG.F-go\AOR to teacher\ANN.SG.M-POSS\(1\).SG
‘She would go to my teacher’ (to ask him to let me go with her watch the cattle) (Western Kabyle)

Without the distal clitic, (9) would simply describe movement towards the teacher, without implying appeal to a consensus with the addressee regarding the situation.

I therefore propose that the function of clitic \(=n\) is to indicate that the process is construed relative to the viewpoint of the addressee. Movement towards the addressee is a possible interpretation, but it cannot be considered as a core function since most examples involve no movement, and no distance towards the addressee.

1.2. The proximal verbal clitic =(i)\(dd\)
As opposed to the distal clitic, 23% of the clauses in narratives, and up to 36% in conversation, have the proximal marker cliticized to the verb or to the clause-initial mood-relative-temporal marker. What are its functions?

1.2.1. Motion verbs
In Western Kabyle, motion verbs are generally underspecified for directionality. We present below the most frequent motion verbs in our corpus.

1.2.1.1. RUH
This verb is rather frequent in narratives, with 36 occurrences in our longest narrative (13:29 mn), among them 12 (33%) are associated with =dd. Examples with a proximal clitic on the verb display the following values:

a) Motion towards a starting point (‘come back’, ‘go back’, ‘return’). In that case the verb has no locative complement:

(10) i-γaz    tasraft // asmi=ɿ    i-fukk / SBJ3SG.M-dig\PFV  pit\ABS // when=ABS3SG.F SBJ3SG.M-finish\PFV / i- ruh=dd / SBJ3SG.M-go\PFV=PROX /
‘He dug a pit. When he had finished, he returned home.’ (Western Kabyle)

b) Motion towards a place (‘come’, ‘go’)
The place is indicated by a complement introduced by preposition ar, ‘to, towards’; =dd indicates that the process is viewed with that location as vantage point.

(11) t-truh=dd    ar jessi-s / SBJ3SG.F go\IPFV=PROX to daughter\PL-KIN3SG /
‘She regularly visited the man’s daughters.’ (Western Kabyle)

Examples without any clitic show the following features:

a) Motion towards a place, when there is a locative complement:

(12) i- ruh    ar wadrar // SBJ3SG.M-go\PFV to mountain\ANN.SG.M //
‘He left for the mountain’ (Western Kabyle)

b) Disappearance, when there is no complement:

(13) t-wala    axxam / i-tif\PFV=dd SBJ3SG.F-see\PFV house\ABS.SG.M / SBJ3SG.M-exit\IPFV=PROX
dg-s    dduxxan // t-ruh // ASSOC.LOC-PREP3SG smoke\ANN // SBJ3SG.F-go\PFV //
‘She saw a house, from which smoke was coming out. She left. (Western Kabyle)

c) A tendency to act as a more or less auxiliarized V1:

(14) i-ruh    ad i-gan / SBJ3SG.M-go\PFV POT SBJ3SG.M-sleep\AOR /
‘He went to bed.’ (Western Kabyle)

(15) t- ruh    t-okks=it=dd / SBJ3SG.F-go\PFV SBJ3SG.F-take \PFV=ABS3SG.M=PROX /
‘The woman went and grabbed it.’ (Western Kabyle)
Regarding motion towards a place, what is the difference between presence and absence of \(=dd\)?

With \(=dd\), the process is considered as having a goal, the endpoint is underlined, the process is viewed from that endpoint.

Without \(=dd\), the process is described without viewpoint, the endpoint is simply locative.

1.2.1. AS, AWḌ

With verbs of motion having an inherent endpoint, \(=dd\) is extremely frequent (\(awḍ\), ‘arrive’; 65%) or even used systematically (\(as\), ‘reach’; 99%)

(16) usa-n=dd ar lxir //
reach\PFV-SBJ3PL.M=PROX to good\ANN //
‘They died (lit. they reached the good life)’ (Western Kabyle)

(17) i-wwəḍ ar lyaba /
SBJ3SG.M-arrive\PFV to forest\ANN.SG /
‘He arrived at the forest.’ (Western Kabyle)

(18) i-wwəḍ=dd ar baba-s /
SBJ3SG.M-arrive\PFV=PROX to father-KIN3SG /
‘He returned to his father’ (Western Kabyle)

Example (17) is viewed neutrally, with a narrative viewpoint, the locative complement expresses the endpoint of the process. In example (18), the process is viewed through a deictic center identified with the locative complement, which is interpreted by default as a starting point.

1.2.2. Change of state verbs

Other verbs having an inherent endpoint or implying a change of state are used with \(=dd\) more often than average : (\(əәkks\), ‘take off, away’, 66%; \(af\), ‘find’ 63%; etc.)

For \(əәkks\) compare example (5) with example (19), the attainment of the endpoint was underlined in (5) with \(=dd\), whereas in (19) there is no zooming effect on the attainment, just a narrative description of the action:

(19) ad=as j-əәkks ləʃi məskint /
POT=DAT3SG SBJ3SG.M-take\AOR clothes\ABS.COLL poor\SG.F /
‘He would take off her clothes, poor girl.’ (Kabyle)

For \(af\), the most frequent difference in meaning is: a description of the object/situation found, when the verb is used without \(=dd\), (ex.20) vs. indication that the object/situation found is unexpected (with \(=dd\), ex.21)

(20) imi t-wwəḍ a Amina ar dinna /
when SBJ3SG.F-arrive\PFV VOC amina to there /
t-ufa d amʃʃn wədɔr //
SBJ3SG.F-find\PFV COP cat\ABS.SG.M GEN mountain\ANN.SG.M //
i=t i-zdɔy-n /
REL.REAL=ABS3SG.M RELSBJ.POS-dwell\PFV-RELSBJ.POS /
wɔxxam-nni //
‘When she arrived there, Amina, she found it was the Mountain Cat who inhabited it, the house. (Western Kabyle)

Position verbs and not only motion verbs can be used with =dd.
Without =dd, the verb qqim, ‘stay’ refers to static position of the subject in some place:

‘He ate, he drank, he stayed for a while.’ (Western Kabyle)

Or that there was movement and that position denoted by qqim is the endpoint of that movement:

‘She talked to him, the ground was swallowing him, until he remained thus.’ (Western Kabyle)

1.2.4. Verb of saying ini
Some verbs have no inherent endpoint, are not motion or position verbs and are nevertheless associated with =dd (ex. ini, 23% of occurrences in conversation, 15% in narratives bear the proximal clitic)
Without =dd the process refers to the fact of uttering something:

‘He said please open the door, I'm a beggar. When she opened the door, Amina, she realized it was her father.’ (Western Kabyle)
when larger than the focuses on the completion of the process on which the main clause depends (the scope is beginning with clause also plays a role: recipients are often associated with the proximal clitic in Kabyle (Western Kabyle)

Or, when the verb is in the imperfective, being named X or Y:

(26) qqar-n=as jamina // say\PFV-SBJ3PL.M=DAT3SG amina //
‘Her name is Amina.’ (Western Kabyle)

With =dd the process refers to:
a) Answering
(27) azəkkka ad=dd t-qqʷəl tamṭut-nni / tomorrow POT=PROX SBJ3SG.F-come_annel\AOR woman\ANN-CNS / ad=as t-ini ma t-nna-mt=as POT=DAT3SG SBJ3SG.F-say\AOR if SBJ2-say\PFV-SBJ2PL.F=DAT3SG
i baba-tkʷnt // ad=as ini-nt / DAT father-KIN2PL.F // POT=DAT3SG say\AOR-SBJ3PL.F /
= n-nna=jas / jo-nna=jaɣ=dd akka // [SBJ1PL-say\PFV=DAT3SG / SBJ3SG.M-say\PFV=DAT1PL=PROX] thus //
‘On the following day the woman would return, she would ask them if they had asked their father (about his marrying her). The girls would tell her "we asked him, and he answered this and that". (Western Kabyle)

b) Saying something relevant to the speaker, with polemical overtones:
(28) tο-nna=jas / nni-ɣ=ak=idd / SBJ3SG.F-say\PFV=DAT3SG / say\PFV-SBJ1SG=DAT2SG.M=PROX / həša tuččin ara ṭṭw-əčč-nt // only eating REL.IRR PASS-eat\AOR-SBJ3PL.F // ad ffy-ənt g wəxxam / POT exit\AOR-SBJ3PL.F LOC house\ANN.SG.M / nay= ad=dd ffy-əɣy // or POT=PROX exit\AOR-SBJ1SG //
‘The woman told her husband: “I told you, I won’t accept anything else than their being eaten, either they quit the house, or I will leave!”’ (Western Kabyle)

1.2.5. Interpretation factors
The semantics and Aktionsart of the verb are important, since motion verbs and processes involving an inherent endpoint (or one represented by a locative complement or an object) are very often associated with the proximal clitic in Kabyle (Mettouchi 1998). Dative pronouns as recipients are often associated with the proximal or distal clitic. The conjunction heading the clause also plays a role: mi ‘when’ is strongly associated with =dd : 60% of temporal clauses beginning with mi contain the proximal clitic, regardless of verb type (the same thing holds with aramma ‘until’), the remaining clauses showing no directional clitic; in this case, =dd focusses on the completion of the process on which the main clause depends (the scope is larger than the verb itself):

(29) mi=dd t-hadər tməddit / when=PROX SBJ3SG.F-be_present\PFV evening\ANN.SG.F /
When the evening came, we would light a fire’ (Western Kabyle)

Ma ‘if’, on the contrary, almost never appears with =dd, and if it does, the focus is on the verb’s interpretation (endpoint of a motion verb for instance):

(30) ma ja-byə ayrum /
if SBJ3SG.M-want\PFV bread\ABS.SG.M /

‘If he wants bread,'

With verbs of motion, the proximal clitic tends to focus on the endpoint of the movement, which is by default the speaker’s deictic center, or a previously mentioned deictic center. If there is a locative complement, it is construed as the endpoint of the movement, and the process is viewed from that endpoint. If the verb is not a motion verb, =dd underlines the present relevance of the process, or its result, or impact on the speaker or another deictic source (see also Mettouchi 1998). If the verb is a verb of saying in the first/second person and/or bears a dative pronoun, =dd underlines the relevance of the process on the speech situation, and the viewpoint of the speaker or another deictic source. When cliticized to a particle or clause marker, =dd may underline the completion or relevance of the process in relation to the speech situation or to another clause.

In sum, the proximal clitic subsumes the following subfunctions: direction towards a deictic center (different from direction towards the addressee), standpoint of the speaker, or of a reported speaker, polemical or counter-expectative stance, reaching of a goal, current relevance or resultative (change-of-state).

I therefore propose the general function 'Situation viewed from the vantage point of the (direct or reported) speaker (or protagonist)' for the proximal clitic in Western Kabyle, the distal clitic expressing the fact that the situation is viewed from the addressee’s viewpoint.

This function allows the interpretation of examples such as (5), reproduced here as (31)

(31) ur=dd zwiɣɣ alamma t-kks=dd
NEG=PROX marry\NEGPFV-SBJ1SG until SBJ3SG.F-take\\PFV=PROX
Fatima ayrum g udəkkən
Fatima bread:ABS LOC shelf:ANN

'I won't marry until Fatima manages to take the bread from the shelf' (Western Kabyle)

The first proximal clitic is clearly speaker-oriented (polemical, a more modal perspective), whereas the second one represents the perspective of the speaker, but from the process-completion point of view (a more aspectual perspective).

2. OTHER BERBER SYSTEMS

Berber languages are varied and cover a large area, from the Mediterranean to Burkina Faso, and from the Atlantic to the oasis of Siwa in Egypt.

Not all Berber languages have a full system of directional clitics: some languages have lost the distal marker (Chaouia (Penchoen 1973 :57); Eastern Kabyle (Galand 1959, Aoumer
2008 and 2011), although the proximal is extensively used. Others such as Siwi (Laoust 1931: 135-136) only have vestigial uses of both clitics, which now belong to the verb root, and do not undergo clitic climbing anymore. The verbs mentioned by Laoust are aḥôn (take), aḡəd (take), and usəd (come):

(32) aḥ-n-ḡət
take:IMP.AOR-DIST-SBJ2PL
“take!” (Siwi, Laoust 1931:136; interlinear glosses Amina Mettouchi)

In Nefusì, where the proximal clitic is used more than in Siwi, Béguinot (1942: 58-62 and 114-115) states that it can attach to a series of motion verbs, among which āwī, 'take' (prendere, nel senso di portarsi via), aḡ, 'take' (prendere), and underlines the fact that the verb *as, 'come', does not appear anymore as such in Nefusì, but has the proximal particle as part of the verb root: āsed. He writes that "(a)lcuni verbi che implicano movimento, come venire, ritornare, giungere, portare ecc possono annullarsi la particella d, ed, che determina una particolare referenza al luogo in cui si trova chi parla o il soggetto di cui si parla, e talvolta un totale cambiamento di senso tra moto a luogo e mota da luogo" (1942:58).

(33) ṭirū ṭənäđed tufūt
now 3F.SG:appear:PFV.PROX sun:F.SG
"Here comes the sun" (Nefusì, Béguinot 1942:61; interlinear glosses Amina Mettouchi)

Those verbs are also frequently associated with directional clitics in Berber languages in which the system is still very pervasive, such as Ghadamsi, Western Kabyle, Tamashek...

In Ghadamsi, the respective frequencies of the proximal and the distal clitics are similar (Lanfray 1973: 227), which is exceptional in Berber, where the distal is generally much rarer than the proximal (Basset 1952:36). The values proposed for the proximal by Lanfray (1973: 47) are: proximity; the fact that the situation concerns the speaker, or that the action is close to the speaker or the protagonist whose viewpoint is adopted. The verbs most frequently used with the proximal clitic are: ūtef (‘enter’), ṣorr (‘give back, turn into’), krt (‘move back’), ās (‘arrive’), among others (Lanfray 1973:47). The values proposed for the distal by Lanfray (1973: 225) are: distance; the fact that the situation concerns a place, a person, a situation that are spatially distant. It can also refer to a meeting, a causality that are going to manifest themselves regarding a third person, who can be absent or distant, or even present.

The verbs most frequently used with the distal clitic are: ig (‘put’), ṭəd (‘arrive’), ās (‘reach’), among others (Lanfray 1973:225-227).

(34) i-ṭekel=i
take:PFV=OBJ3SG.M i-ger-t=in
SBJ3SG.M-take:PFV=OBJ3SG.M SBJ3SG.M-throw:PFV=OBJ3SG.M=DIST
‘He took it and threw it’ (Ghadamsi, Lanfray 1973:225; interlinear glosses Amina Mettouchi)

In Tamashek, Heath (2005: 595) notes that both the ‘centripetal’ and ‘centrifugal’ clitics are used, but the latter is “less common than the centripetal in texts” (2005:301). According to Heath (2005:598), the centripetal “specifies direction of movement (whether completed or not) toward the deictic center, usually the speaker’s ‘here’ but sometimes another deictic center within a narrative. [...] With non-motion verbs, the clitic suggests that the action was

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2 *Some verbs implying motion, such as come, return, reach, carry, etc. can appear with particle d, ed, which refers to the place in which the speaker or the subject about which the speaker talks is situated, and sometimes triggers a total change of meaning from movement towards a place to movement from a place*.
directed toward ‘here’ in some way, or that it was accompanied by motion toward here”. The centrifugal clitic “indicates direction toward a nonproximate location with motion verbs (‘run away’), fixed nonproximate location with statives (‘sit way over there’), and motion away from the deictic center in combination with activity verbs (‘go away chewing’)” (Heath 2005:601).

(35) ha a-wén-dæ̞ hæræ̞ akkæ̞s-t-în
ah ! DEM-DIST-ANAPH thing take.away.IMPRPT-3MASGO-\CENTRIF
‘Ah, that (is) a thing (=custom), get rid of it!’ (Tamashek, Heath 2005:601)

(36) i-kša-lhîn
sit.PERF-1SG-\CENTRIF
‘I stayed there (i.e. didn’t come)’ (Tamashek, Heath 2005:600)

(37) a-tt-\add ə̞away-æ̞
FUT-3MASGO-\CENTRIP bring.SHIMPF-1SGS
‘I’ll bring it/him’ (Tamashek, Heath 2005:597)

(38) iššva̞l-\add
3MASG\-work.PERF-\CENTRIP
‘He came working.’ (=He was working as he came’) (Tamashek, Heath 2005:599)

This brief survey of the systems in some Berber languages calls for the following conclusions:
a) the system of ‘directionals’ originally involved both a proximal and a distal clitics, since both appear in several Berber languages in various geographical areas;
b) the systems where both clitics are still quite frequently used (Ghadamsi and Tamashek) involve spatiality more centrally than those in which only the proximal is retained (Eastern Kabyle, Chaouia, Nefusi), or in which the distal is much rarer than the proximal (Western Kabyle).
c) in the latter languages, viewpoint of the speaker (or the addressee when there is a distal) is prevalent over movement towards the location of the speaker or away from him.
d) in languages where both clitics are used (Ghadamsi and Tamashek), the system of nominal deictics is also very rich and complex, involving fine-grained spatial distinctions.
e) in languages that have almost completely lost the system of directionals, such as Siwi, the clitics are retained on punctual verbs which semantically involve transition or endpoint (‘take’, ‘arrive’).

3. Grammaticalization hypotheses

The question is now whether the survey of the various systems of directionals throughout the Berber languages can help us decide how the system was grammaticalized. In the whole Berber area, the directionals are variants of =dd and =n. They are all cliticized to the verb or to the mood-aspect-negation-relativization head of the clause. A common origin for each clitic is therefore very probable.

The first hypothesis is that those directionals were grammaticalized from motion verbs. There are elements in favor and elements against this hypothesis. The second hypothesis is that those directionals were grammaticalized from demonstratives. Here again, this hypothesis is supported by some facts, and undermined by others.

3.1. Grammaticalization from verbs
The most likely candidate for the grammaticalization of =dd is verb ddu, meaning ‘move’, with a strong comitative component, and no marked directionality (although often translated ‘go’ in glossaries/dictionaries). It appears synchronically as ddu in Western Kabyle (‘accompany’, ‘go with’), ddu in Eastern Kabyle (‘walk’), idaw in Tamashek (‘to accompany’, ‘be with’; ‘be married to’), addiw in Wargli (‘to accompany’, ‘go with’, ‘walk’). This verb does not appear however in the glossaries of Mzab Berber, Nefusi, or Ghadamsi.

One argument in favor of ddu is phonological: in most Berber varieties where it appears, it has a geminated root consonant, just like the proximal marker. Moreover, it belongs to the semantic domain of motion, which is a frequent source for ventive extensions (Frajzyngier 1987, Heine & Kuteva 2002). It has been grammaticalized in Shilha as near-future clitic, which shows that it has potential for grammaticalization. In example (38) the verb still has its full meaning but is employed metaphorically:

(38) i-dda ad i-hmu  
SBJ3SG.M-move\PFV POT SBJ3SG.M-be_warm\AOR  
‘It is about to warm up’ (Shilha)

In example (39) the verb has undergone morphological and phonetic reduction (loss of the personal affix, fusion of the verb and the following particle), it is fully grammaticalized:

(39) ddad ihmu  
FUT.PROX SBJ3SG.M-be_warm\AOR  
‘It is going to warm up’. (Shilha)

However, there are arguments against ddu as a candidate for grammaticalization into the proximal clitic: first, the proximal clitic is postverbal (or enclitic to heads), which makes it a V2 if we think in terms of V1-V2 sequences. The problem is that V1-V2 verb sequences in Berber have V1 typically more abstract and functional and V2 typically more ‘lexical’. V1 is more likely than V2 to grammaticalize, as is shown by all the cases of grammaticalization of V1 into auxiliaries or particles in various Berber languages. No instance of V2 grammaticalization has ever been noted so far.

A solution to this counterargument would be to postulate that grammaticalization started in the ‘clitic climbing’ position (i.e. in irrealis, negative and relative clause), and only then extended to postverbal position (other types of clauses and moods). Following this hypothesis, verb ddu might have appeared as a reinforcement of a second verb:

(40) ad j-ddu j-as  
POT SBJ3SG.M-move\AOR SBJ3SG.M-arrive\AOR  
‘He will arrive here’ (lit. ‘he will move arrive’)

Then the full verb would have undergone phonetic reduction and cliticized to the potential particle:

(41) ad=dd j-as  
POT=PROX SBJ3SG.M-arrive\AOR  
‘He will arrive here’

Then, since dative and absolutive pronouns in this position appear after the verb when there are no mood-negation-relative markers, it would be possible to postulate that from a sequence such as:
the proximal particle could move to postverbal position together with all the other clitics:

(43) j-əfk=jas=t=idd
SBJ3SG.M-give\PFV=DAT3SG=ABSV3SG.M=PROX
‘He gave it to her’

thus making this position available for this marker, even when there are no pronominal clitics:

(44) j-usa=dd
SBJ3SG.M-arrive\PFV=PROX
‘He arrived’

This scenario would have to be replicated for the other member of the directional system, clitic =\n. In this case, the most likely candidate would be verb ini ‘say’ (attested in almost all Berber languages that have not replaced it with a borrowing of Arabic origin), which is not a motion verb. It has been grammaticalized as a conjunction meaning ‘or’ in Wargli for instance (Delheure 1987:208). However, the link with the synchronic distal/addressee-oriented meanings is rather difficult to establish. And Heine and Kuteva (2002) do not provide those meanings as usual grammaticalized meanings for verbs of saying. There is no external evidence for his hypothesis, and no attested grammaticalization of a verb ‘say’ in Berber other than for a conjunction.

3.2. Grammaticalization of demonstratives

The marker n is part of the demonstrative system of all Berber languages, with a distal meaning: argaz-an (‘that man’, Shilha), argaz-on (‘that man’, Wargli), węggid-enn (‘that man’, Ghadamsi), eħałos-én (‘that man’, Tamashek), etc. Similarly, marker d is part of the demonstrative system of several Berber languages, with a proximal meaning: argaz-ad (‘this man’, Shilha), węggid-udet (‘this (very close) man’, Ghadamsi), eħałos-di (‘this man’ (near-distant), Tamashek), etc.

D is also the deictic formative associated to locative prepositions i/ay in most Berber languages, and of the series of locative demonstratives, proximal and distal (da, dagi, ‘here’ (Kabyle); din, dinna, ‘there’ (Kabyle); dīhā, ‘here’ (Tamashek), dihēn, ‘there’ (Tamashek), dāh, dāha, ‘here’ (Nefusi), dūs, ‘there’ (Nefusi), etc.). The potential particle ad (<a+d), which indicates the process as potential but tending towards realization (future, conditional, tendencial etc.) also contains deictic d in most Berber languages. The origin of the equative-locative copula d is most probably deictic as well.

Therefore, another grammaticalization hypothesis would be that the system of nominal demonstratives has been grammaticalized on verbs by analogy. This hypothesis is supported by external evidence, since there are languages where demonstratives have grammaticalized as directional verbal extensions (Papago, Mojave and Inuktikut are cited by Diessel (1999: 142), Bourdin (2002: 186) also mentions this fact.
However, it is not the most frequently used proximal suffixes (vocalic –a, -i, or -ụ depending on Berber languages) that have been grammaticalized as a proximal extension on verbs, but the deictic d, whereas it is the distal demonstrative that has been grammaticalized as a distal extension on verbs. The nominal and the verbal systems are not completely parallel, except for some Berber languages such as Shilha (Galand :1959)

This man (prox)        argaz-a-d
That man (dist)         argaz-a-nn
He arrived (here)      juska-d
He arrived (there, where I no longer am) juska-nn

This general lack of parallelism may point to still another hypothesis, implying independent grammaticalization, through analogy, of verbal clitic =n from the demonstrative suffix -n, and of verbal clitic =dd or =d from the deictic formative d. This might explain why some Berber languages do not have the distal verbal extension =n, while they have the proximal =d(d). It is indeed not obvious that the two verbal extensions function as a system, even in synchrony, unlike the system of proximal/distal demonstratives on nouns.

3.2. A grammaticalization network?

Given that both hypotheses (reanalysis from verb DDW, and analogy with the deictic formative d) have their strengths and weaknesses, a solution would be to consider that demonstrative formative d was selected for verbal proximal clitic because d is a locative formative in many Berber languages, and a deictic one in some. Also, given that Berber has a root-and-pattern morphology, it might well be the case that the verb ddu itself was created from the demonstrative root D (and the abstract notion of deixis) by amplification. The grammaticalization of clitic =dd from a deictic by analogy would have been reinforced by the presence of verb ddu in the lexicon. Thus, what would be at play for marker =d(d) would not be so much a straightforward analogical transfer from nominal demonstrative to verbal deictic, than a grammaticalization network, where grammaticalization of the verbal extension would have been reinforced by the diffusion of deictic root D throughout the whole system, in various forms: demonstrative formative d-, equative-existential copula d, comitative preposition d, verb ddu ('go with', 'accompany'). The common semantics revolves around the notion of closeness to a deictic center or a (human) landmark. Such relationships between various grammatical domains is also attested in Chadic, see Frajzyngier (2008).

It may well be the case that the more straightforward grammaticalization by analogy of -n from distal demonstrative on nouns to distal (actually relational) extension on verbs =n was also reinforced by a similar network including genitive preposition n and middle prefix n-.

Conclusion

Given the arguments developed in this paper, demonstratives are the most likely candidates as sources of the grammaticalization of the ‘directionals’ of Berber. If one considers that the semantics or original function of the source of grammaticalization motivates to a certain extent the target of grammaticalization, this would explain the fact that directionals are not limited to motion specification in Berber, but are used for all sorts of verbs, and clauses (negative, irrealis etc.). It would also explain the variety of values they carry: spatial, aspectual, modal... Demonstratives, by integrating all dimensions of the speech situation, the

3 Note, however, that in Siwi, the proximal suffix -a is used as resultative and current relevance marker on verbs and adjectives (Schiaffarella in preparation).
hic et nunc as well as the speaker and the addressee, have a potentially broader scope than motion verbs, thus giving rise to more varied contextual interpretations. Motion verbs themselves are seldom grammaticalized in Berber: the near-future auxiliary of Shilha (based on ddu, ‘move with’), and the tendency of ruh (‘leave’) to act as an abstract V1 in sequences, are the only documented cases. Position and change of position verbs such as kkr ‘stand, stand up’, and qqim, ‘stay’, tend to grammaticalize more easily.

References
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