

CHAPTER 10

The influence of the state distinction on word order and information structure in Kabyle and Siwi (Berber)

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This paper, based on monologues and dialogues recorded in the field, shows how the presence (Kabyle) or the absence (Siwi) of an inflectional marking on nouns called state impacts the number and functions of grammatical relations and information structure constructions in those two closely related Berber languages. Indeed, in Kabyle, state allows to distinguish between subject and object when two nouns follow each other after the verb, whereas in Siwi, sequences of two postverbal nominal arguments are avoided; only AVO is attested. As linear ordering is also a formal means for information structure coding, this results in Siwi having fewer constructions available for that functional domain, and consequently, different information structure functions encoded through linear ordering than Kabyle.

Introduction

Berber languages are known to share a number of morphological features (Basset 1952; Galand 2010; Kossmann 2012), among them a distinction between absolute and annexed states on nominals that characterizes most Berber languages (Mettouchi 2014), and in particular Kabyle. In that language, the distinction plays a role, together with other formal means, in coding grammatical relations on nouns, and building information structure constructions (Mettouchi 2013, 2015 and 2018).

A few Berber languages however, such as Siwi, do not have that distinction.

The question addressed in this paper is therefore to what extent the absence of the state distinction plays a role in the number of grammatical and information structure constructions found in Siwi and their functions, compared to those of Kabyle.

Indeed, while both languages have clauses without nominal arguments, there are differences between them in the ordering of NPs when nominal arguments appear. Those differences will be investigated in the present paper, on the basis of recordings made in the field, transcribed, translated and annotated with Praat¹ and Elan-CorpA.²

After providing linguistic information about Berber in general, and Siwi and Kabyle in particular, we will show in 2. that the absence of the state distinction in Siwi impacts the coding of grammatical relations as compared to Kabyle, and in 3. that the resulting constructions convey different information structure values in Kabyle and Siwi. Thus, two languages that are morphosyntactically close end up having very different form-function mappings as far as information structure is concerned.

1. Kabyle and Siwi

Berber languages are spoken in northern Africa, in a zone delimited by the Atlantic Ocean to the West, the Mediterranean to the North, the oasis of Siwa (Egypt) to the East, and the southern borders of Mali and Niger to the South. Those languages constitute a family within the Afroasiatic phylum. Classification of the Berber languages is mostly based on geographical distribution (Kossmann 2012: 18–19).

Kabyle is a Northern Berber language, while Siwi is an Eastern Berber language.

Kabyle is spoken by about three million people in the north of Algeria. The variety investigated in this paper is a Western one, spoken by the Ait Idjer tribe in the village of Ait Ikhlef, close to the town of Bouzeguene. All data have been collected by Amina Mettouchi on fieldwork between 2007 and 2011.

Siwi is spoken by about twenty-five thousand people in the oases of Siwa and El Gara, in the Western Desert, Egypt. All data have been collected by Valentina Schiattarella on fieldwork between 2011 and 2014.

Berber verbs bear subject bound pronouns with argumental (as opposed to agreement) status (Galand 1964). Other pronominal forms (direct and indirect objects) are affixed or cliticized to verbs.³ On the basis of the pronominal system, both languages have nominative/accusative alignments.⁴

1. <<http://www.fon.hum.uva.nl/praat/>>

2. <<http://tla.mpi.nl/tools/tla-tools/elan/> & http://llacan.vjf.cnrs.fr/res_ELAN-CorpA.php>

3. In Kabyle, in the presence of a mood-aspect-negation particle or a relativizer, those clitics climb and attach to those new heads of the clause (cf. Example (6)).

4. See Aikhenvald (1995) for a diachronic hypothesis involving ancient ergativity.

Kabyle:

- (1) jfkajastən
j-fka=jas=tən
 SBJ.3SG.M-give\PFV=IO.3SG=DO.3PL.M
 ‘He gave them to him/her.’ (Kabyle)

Siwi:

- (2) juǰástən
j-uf-ás-tən
 SBJ.3SG.M-give\PFV-IO.3SG-DO.3PL
 ‘He gave them to him/her.’ (Siwi)

Noun phrases referring to arguments are not obligatory; when they appear, they are co-indexed with a bound pronoun. An exception is the nominal direct object, which is not co-indexed with a bound pronoun unless it is preverbal, or right-detached. Indirect objects, when nominal, are introduced by a preposition in both languages. They are not discussed in this paper.

Gender and number are morphologically marked on nouns. Additionally, as mentioned in the introduction, some Berber languages (e.g. Kabyle) have inflectional marking, called state,⁵ while others (e.g. Siwi) don’t.

5. While not all nouns overtly mark the state distinction in Kabyle (and some other Berber languages), the working assumption in this paper is that all nouns are interpreted as expressing state. This is based on the following evidence:

1. Native speakers of Kabyle never hesitate when they are asked to replace a noun that doesn’t overtly mark state by a noun that does, in a given clause: they choose one or the other state depending on its insertion context, which shows that this information is, without ambiguity, underlyingly present/retrievable,
2. recent French loanwords are integrated in the two states, whenever their phonological structure allows, e.g. *apurtabl/uputable* (‘cell phone’, FR ‘portable’), *aflaǰdisk/uflaǰdisk* (‘memory stick’, FR ‘flashdisk’), *astilu/ustilu* (‘pen’, FR ‘stylo’) etc., which shows that the distinction is synchronically active in the speakers’ linguistic system.

The kind of phonologically-based syncretism observed in a number of nouns in Kabyle, which is sometimes preferably called homophony (cf. Luraghi 2000), does not indicate functional neutralization, and therefore, all Kabyle nouns in this paper will be glossed ABS or ANN. This choice is supported by a discussion on glossing conventions in Baerman, Brown & Corbett (2005: 11–12).

Table 1. Gender, number and state in Kabyle

	Masculine		Feminine	
	Singular	Plural	Singular	Plural
Absolute	a-my \bar{a} r	i-my \bar{a} r-n	t-a-my \bar{a} r-t	t-i-my \bar{a} r-in
Annexed (root <i>my\bar{a}r</i> , ‘old person’)	w-my \bar{a} r	j-my \bar{a} r-n	t-my \bar{a} r-t	t-my \bar{a} r-in

Table 2. Gender and number in Siwi

Masculine		Feminine	
Singular	Plural	Singular	Plural
fa $\bar{r}\bar{a}$ f	i-fa \bar{r} f- \bar{a} n	t-fa $\bar{r}\bar{a}$ f-t	t-i-fa \bar{r} f-en
(fa $\bar{r}\bar{a}$ f, ‘old person’)			

2. Grammatical relations

2.1 Coding means

Several formal means are involved in the coding of grammatical relations, as shown in Mettouchi (2013 and 2018) for Kabyle: bound pronominal paradigms, linear ordering, prosodic boundaries, and state marking on nominals.

All nominals in Kabyle (except for some loanwords and kinship terms, as well as some nouns with an initial radical vowel) are marked for state. The state opposition is a binary morphological distinction that marks nouns as either Absolute (or Free) or Annexed. This opposition does not mark a distinction between grammatical relations, as clearly shown in Mettouchi (2014, 2018), and Mettouchi and Frajzyngier (2013). While most Berberologists (e.g. Chaker 1988; Kossmann 2012) consider the opposition as no longer functional in synchrony, general linguists or typologists often assume that it is, but often wrongly identify the annexed state with a subject or (marked) nominative case (Arkadiev 2008; König 2006 & 2008). The only study that actually lists all the contexts of use for Kabyle and offers a general, though abstract synchronic function for the opposition is Mettouchi & Frajzyngier (2013). That study argues that the annexed state “provide[s] the value (in the logical sense) for the variable of the function grammaticalized in a preceding constituent”⁶

6. “A grammaticalized function is a function that is represented by a morpheme, which may be affixal (bound pronouns, gender-number markers) or non-affixal (prepositions, relational morphemes). A function is grammaticalized when it is coded by some grammatical marker.” (Mettouchi & Frajzyngier 2013: 2)

(Mettouchi & Frajzyngier 2013: 2), while the absolute state “is the default form of the noun and does not carry any specific function.” (Mettouchi & Frajzyngier 2013: 2).

The state opposition in Kabyle is a systematic coding means, highly abstract in synchrony, which indirectly allows several distinctions to be made in the language, among them the transparent computing of nominal subject versus object in the position after the verb, within the prosodic group of the verb.⁷

But this computing is a by-product of the overall function of the state opposition, not its fundamental role,⁸ as is shown by the fact that there is no one-to-one correspondence between subject and object on the one hand, and absolute and annexed states on the other hand: (3a) and (3a') have the subject in the absolute state when preverbal, and in the annexed when postverbal. Similarly, (4b) and (4b') have the postverbal object in the absolute state when there is no coreferent object pronoun, and in the annexed when there is one (=it).

- (3) a. *argaz* *j-mmut*
 man\ABS.SG.M SBJ.3.SG.M-die\PFV
 a'. *j-mmut* *wərgaz*
 SBJ.3SG.M-die\PFV man\ANN.SG.M
 'a/the man died'
- (4) b. *i-wwət* *ayjul*
 SBJ.3.SG.M-hit\PFV donkey\ABS.SG.M
 b'. *i-wwət=it,* *wəyjul*
 SBJ.3.SG.M-hit\PFV=do.3.SG.M donkey\ANN.SG.M
 'he hit (it,) a/the donkey'

It is important to underline the fact that no other mark compensates for the lack of state opposition in Siwi, in synchrony. Siwi, as well as other state-less Berber languages, features accent alternation (last/penultimate syllable) on nouns: this alternation has been related to the lack/loss of state opposition (see Brugnatelli 1986, 2005 & Schiattarella 2015: 259–262 for discussion). Synchronically, accent has different functions and its placement depends on several factors (Vycichl 1981, 2005: 155, 175, 178, 207, 211, 250; Louali and Philippson 2004, 2005; Souag 2013: 80–82; Schiattarella 2015: 237–262). It does not distinguish between grammatical relations: accent can be on the last or penultimate syllable, regardless of whether the noun is interpreted as subject or object.

7. But not in the position before the verb within the prosodic group of the verb, or if the noun is outside the prosodic group of the verb.

8. For detailed evidence supporting this claim, the reader is referred to Mettouchi & Frajzyngier 2013, and Mettouchi 2018.

Prosody also plays a role in the computing of grammatical relations on nouns in Kabyle and Siwi, mainly through prosodic boundaries, which delimit intonation units. Cross-linguistically, intonation units are generally marked by one or more of the following cues (Chafe 1994; Cruttenden 1997; Du Bois et al. 1992; 1993; Tao 1996):

Main external cues

(1) final lengthening; (2) initial rush; (3) pitch reset; (4) pause; (5) creaky voice.

Main internal cues

(1) declination; (2) tonal parallelism, or isotony.

In both corpora, prosodic boundaries were identified on the basis of native speaker perception, with additional control using Praat when native speakers were not totally confident, or where positioning of boundaries differed; they were marked as minor (/) or major (//) depending on the salience of the abovementioned cues. In the Kabyle corpus,⁹ the main cues were pauses and pitch reset, as well as the combination of final lengthening and initial rush. In Siwi, the main cues were pauses and pitch reset. All examples used for this study were controlled once again in Praat, to ensure proper placement and characterization of the prosodic boundaries.

Linear ordering (also referred to here as word order, or position) is a series of formal means, crucially depending on the existence of a reference point (Frajzyngier & Shay 2003: 60–62), which is overtly and unambiguously coded for this function. This reference point is different from one language to another.

In Kabyle (and Berber in general), the verb is a salient potential reference point, as it is formally always affixed by a specialized paradigm of subject pronouns. It cannot therefore be confused with any other element of the clause. Similarly, prosodic boundaries are salient in the flow of speech (Mettouchi et al. 2007), which is why we also take into account the position of the nominal relative to (i.e. before or after) the prosodic boundary.

While Siwi does not have the state opposition, it does distinguish between various linear orderings, does segment speech into intonation units, and has specialized pronominal paradigms. The two languages differ by the presence or absence of the state opposition.

In order to compare how Siwi and Kabyle allow the computation of grammatical relations on nouns, we have worked on two corpora, of one hour each, composed of 20 minutes of dialogue and 40 minutes of monologue (narrative), that we segmented into intonation units, in each language, regardless of any other cue, syntactic, semantic or other. We have then systematically searched for regular

9. The Kabyle corpus (with full audio, transcription, annotation and translation) is available online for verification, at <<https://doi.org/10.1075/scl.68.website>>.

constructions involving the cues discussed in this part of the paper, namely state marking on nouns when applicable, bound pronouns on verbs, and linear ordering of nominals with respect to verbs, and to prosodic boundaries.

Whenever a given construction was not attested in the one-hour corpora, complementary spontaneous data recorded on fieldwork, as well as elicited grammaticality judgments were additionally considered.

The Kabyle corpus contains 2370¹⁰ main or independent verbal clauses. About 85% of the verbs appear alone or followed by a lexical direct object; right- and left-detached clauses are rather rare, each amounting to about 2% of clauses. Clauses with a preverbal noun within the prosodic group of the verb are about 4%, whereas those with a postverbal noun inside the prosodic group of the verb are about 8%. For more detailed counts, also involving Aspect-Mood forms, see Mettouchi (2015).

The one-hour Siwi corpus contains 1614 main or independent verbal clauses. 93% of the verbs appear alone or followed by a lexical direct object; right- and left-detached clauses amount to about 0.8% of clauses. Preverbal nouns are more frequent (4%) than postverbal ones (2%).

2.2 Possible constructions

Our investigation primarily concerns constructions involving the verb and its nominal arguments. In order to avoid aprioristic assumptions about the function of nominals in those environments, we have decided to present the constructions on the basis of the following features:

1. Presence or absence of a noun
2. Number of nouns in the intonation unit containing the verb form
3. State of those nouns if applicable (i.e. for Kabyle only)
4. Position of the noun(s) relative to the verb and the prosodic boundary of the intonation unit containing that verb, and possibly relative to each other

Several constructions were encountered, involving either one or two nouns.

2.2.1 $V_{\text{aff}(cl)}$ ¹¹ + one noun

In both languages, when the noun is outside the prosodic boundaries of the prosodic group containing the verb, we encounter the following constructions:

10. The difference in the quantity of verbs between the Kabyle and Siwi corpora is due to the fact that the Kabyle corpus contains conversations with overlapping speech, and features faster speech-rates of speakers.

11. The abbreviation $V_{\text{aff}(cl)}$ represents the verb with its bound (affixed or cliticized) pronoun(s).

$$\begin{array}{l} N [V_{\text{aff}(\text{cl})} (X^{12})] \\ [V_{\text{aff}(\text{cl})} (X)] N \end{array}$$

The noun outside the boundary doesn't have a fixed grammatical role, and is simply co-referent with the corresponding bound pronoun affixed or cliticized to the verb. This is true for Kabyle (see Mettouchi 2013, 2015 & 2018) and Siwi (Schiattarella 2015: 292).

When the noun is inside the prosodic boundary, and in the preverbal position, we have:

In Kabyle:

[N_{abs} V_{aff(cl)}], where N can be interpreted as either subject (5) or object (6)

(5) *irgazən tsyimən* //
irgazn tsyim-ən //
 man\ABS.PL.M stay\IPFV-SBJ.3PL.M //
 'the men stay at home.' (Kabyle)

(6) *tamyarθ urtšhsiβənt ə:: /*
tamyart ur=tt ħsib-ənt ə:: /
 old_person\ABS.SG.F NEG=DO.3SG.F count\NEG.PFV-SBJ.3PL.F HESIT /
 'mothers-in-law are not respected (by their daughters-in-law) (lit. the mother-in-law they [=daughters-in-law] don't count her.' (Kabyle)

In Siwi, we have [NV_{aff(cl)}], where N can also be interpreted as either subject (7) or object (8), even if the latter is strongly avoided.

(7) *tləʃfənnək tuʔən / təmmút /*
tləʃfə-nnək t-uʔən / tə-mmút /
 girl\SG.F-POSS.2SG.M SBJ.3SG.F-be_sick\PFV / SBJ.3SG.F-die\PFV /
 'Your daughter was sick, she died.' (Siwi)

(8) *iysán díma səmsamát-tən /*
iysán díma səmsam-át-tən /
 bone\M.PL always boil\IPFV-SBJ.2SG-DO.3PL /
 'You would always boil the bones' (Siwi)

When the noun is in the postverbal position, we have:

In Kabyle:

[V_{aff(cl)}N], which can be interpreted, depending on the state borne by the noun, as

1. V_{aff} N_{abs} = VO
2. V_{aff(cl)} N_{ann} = VS or VA

12. (X) here stands for a noun, or an adverb, and square brackets represent prosodic boundaries.

- (9) *iɣlləq asənduqnni /*
i-ɣlləq asənduq-nni /
 SBJ.3SG.M-shut\PFV box\ABS.SG.M-SHREF /
 ‘He shut the chest,’ (Kabyle)
- (10) *θɣawəð θəswiθ //*
t-ɣawəd təswiθ //
 SBJ.3SG.F-change\PFV period\ANN.SG.F //
 ‘Times have changed’ (lit. ‘the period has changed’) (Kabyle)

Position alone does not distinguish between subject and object within the prosodic group of the verb, but with state as an additional coding means, subject and object are unambiguously differentiated (Mettouchi 2013 & 2018), as is shown by the comparison between Examples (9) and (10). Both verbs being labile, had the noun in (9) been in the annexed state, the meaning would have been ‘the chest was shut’, and had the noun in (10) been in the absolute state, the meaning would have been ‘she changed the period’.

In Siwi:

[$V_{\text{aff}(\text{cl})}$ N] can be either $V_{\text{aff}}\text{O}$, $V_{\text{aff}}\text{S}$ or $V_{\text{aff}(\text{cl})}\text{A}$

$V_{\text{aff}}\text{O}$

- (11) *jəzɣá tyátt / ixáss aɣɣwónnəs /*
jə-zɣá tyátt / i-xáss aɣɣu-ánnəs /
 SBJ.3SG.M-see\PFV goat\SG.F / SBJ.3SG.M-want\IPFV eat\VN-POSS.3SG /
 ‘He saw a she-goat, he wanted to eat her.’ (Siwi)

$V_{\text{aff}}\text{S}$

- (12) *tusəd tjaɣtost / təɣɣá iyijárən /*
t-usəd tjaɣtost / tə-ɣɣá iyijárən /
 SBJ.3SG.F-come\PFV cat\SG.F / SBJ.3SG.F-eat\PFV ighiyaren\PL.M /
 ‘A female cat came and ate the *ighiyaren* (dish with lentils).’ (Siwi)

At this point, a question arises: why can Siwi have $V_{\text{aff}}\text{O}$ as well as $V_{\text{aff}(\text{cl})}\text{A}$ or $V_{\text{aff}}\text{S}$, whereas it does not have the state distinction and appears to therefore be unable to discriminate between subject and object by way of morphological marking? Do we have here an instance of violation of the principle of functional transparency?

If we accept the principle of functional transparency (Frajzyngier 2005: 259) which states that “every utterance has a transparent role in a discourse and that every constituent has a transparent¹³ role within an utterance”, we have to claim

13. “‘Transparency’ refers to the functional domains coded in the language rather than to the addressee’s need to understand the role of the constituent in some real world” (Frajzyngier 2005: 259).

that preverbal position does not code grammatical relation in Kabyle (see also Mettouchi 2013, 2018) or Siwi. In other words, Kabyle and Siwi code grammatical relations on noun phrases only in some constructions.

Transparency is maintained because in both languages, if the preverbal noun is a direct object, then a coreferent direct object pronoun always appears, cliticized to the verb (as in Example (8) in Siwi, the only example in the whole data) or to a predicative head triggering clitic-climbing (as in Example (6) in Kabyle, where the pronoun is cliticized to the negative morpheme).

If the preverbal noun is a transitive subject, as in Example (13), then the object pronoun (here *ay*, DO.1PL) is not coreferent to the preverbal noun. Transparency is therefore preserved. It is interesting to note that no instance of identity in gender-number without coreference between an object pronoun and a preverbal noun was found in several hours of Kabyle and Siwi naturally-occurring speech. This seems to support the idea that speakers tend to avoid potential ambiguity.

- (13) $\beta a\beta a$ $j\grave{a}bbw\ddot{i}j a y i d$ $a r \grave{d} a g i$ /
baba $j\grave{a}-w w i j = a y = i d d$ *a r d a g i* /
 father.ABS.SG.M SBJ.3SG.M-bring\PFV=DO.1PL=PROX to here /
 ‘our father brought us here’ (Kabyle)

As for the question concerning the discrimination of subject and object in postverbal position, whereas a Kabyle speaker can always discriminate between the two – in postverbal position, within the prosodic group of the verb – thanks to the state borne by the noun, a Siwi speaker discriminates grammatical relations only through word order, the presence of the direct object pronoun, and crucial information about the valency of the verb and its interpretation.

Indeed, contrary to Kabyle where lability is the property of the construction, and a lot of verbs can be used transitively and intransitively, in Siwi, verbs are clearly assigned a class, transitive, intransitive or labile, and grammatical relations are only coded by position and prosody, taking into account verb valency and coreference between nouns and clitic pronouns.

If the verb is strictly transitive, and the noun is after the verb, then that noun is the object, as shown in the first part of (11): $j\grave{a}z\ddot{r} \acute{a}$ $t\ddot{y}\grave{a} t t$ ‘He saw a goat.’ If the transitive verb has an affixed direct object pronoun, then the noun after the verb, within the prosodic group of that verb, is its subject ($V_{\text{aff}(\text{cl})}A$), as shown in (28), partially reproduced here:

- $j\grave{a}-z\ddot{r}-\acute{e} t$ $\acute{d}\ddot{z} \acute{r}$ n $s\acute{o} l \grave{t} a n$ /
 SBJ.3SG.M-see\PFV-DO.3SG.F child\SG.M GEN sultan\SG.M /
 ‘The son of the sultan saw her’ (Siwi)

If the verb is strictly intransitive, the nominal argument can appear before (7) or after (12) the verb, and in both cases it will necessarily be the subject.

If the verb is labile, the coding of grammatical relations is different because in that case, S can only appear in preverbal position. We can then conclude that if the verb bears no direct object clitic and the noun precedes the verb, then the labile verb is used intransitively and the noun is its subject (14); if the noun follows the verb, then the labile verb is used transitively and the noun is its object (15).

(14) *albáb jəfták*
albáb jə-fták
 door\SG.M SBJ.3SG.M-open\PFV
 ‘A door opened’ (Siwi)

(15) *jəfták albáb*
jə-fták albáb
 SBJ.3SG.M-open\PFV door\SG.M
 ‘He opened a door’ (Siwi)

Position therefore ensures functional transparency in the interpretation of grammatical relations with labile verbs in Siwi.

To sum up, in Kabyle, position alone does not code grammatical relations and state makes it possible to distinguish between A/S and O in postverbal position.¹⁴

In Siwi, a noun in postverbal position is interpreted as A if the transitive verb bears direct object clitics, O if the transitive (or labile, transitively used) verb does not bear any direct object clitic, and S with inherently intransitive verbs.

If the noun precedes the verb, in Kabyle it is obligatorily in the absolute state and can be both subject or (in)direct object. If (in)direct object, it must be indexed by a clitic, as in (16) (its role is transparent also in this case):

(16) *jiwəθ jəfkajas nnəfsʰ //*
jiwət jə-fka=jas nnəfsʰ //
 one\F SBJ.3SG.M-give\PFV=IO.3SG half //
 ‘He gave half (an apple) to one (of his wives)?’ (lit. ‘one he gave her half’) (Kabyle)

In Siwi, the possible constructions for the preverbal position are the same as in Kabyle, the difference is that the noun is not marked by state in Siwi, but since, in Kabyle, only the absolute state can appear in preverbal position, there is no possible discrimination through state marking in that language either. In preverbal position, functional transparency is maintained thanks to the presence or absence of a coreferent direct object bound pronoun, in both languages.

14. In postverbal position, indirect object is always introduced by preposition *i*, and therefore unambiguously coded.

2.2.2 $V_{\text{aff}(\text{cl})} + \text{two nouns}$

When the verb appears with two nouns we have:

In Kabyle

$N_{\text{abs}} V_{\text{aff}} N_{\text{abs}} = \text{AVO}$

$N_{\text{abs}} V_{\text{aff}(\text{cl})} N_{\text{ann}} = \text{OVA}$

$V_{\text{aff}} N_{\text{ann}} N_{\text{abs}} = \text{VAO}$

$V_{\text{aff}} N_{\text{abs}} N_{\text{ann}} = \text{VOA}$

In Siwi

$NV_{\text{aff}}N = \text{always AVO}$

In Kabyle, word orders are almost fully flexible.

When two nouns follow the verb as in (17), state allows the coding of their grammatical relation.

- (17) ayiddəhku səttsi θimuʃufia //
ad=ay=idd tə-hku səttsi
 POT=IO.1PL=PROX SBJ.3SG.F-tell\AOR grandmother\ANN.SG.F
timuʃuha //
 tale\ABS.PL.F //
 ‘My grandma would tell us folktales.’ (Kabyle)

The constructions allowed for Siwi are not so flexible because the lack of state distinction does not allow two nouns on the same side of the verb to be distinguished in terms of grammatical relations. OVA was not encountered in the data. AVO is the only order that allows unambiguous coding of A and O and this is consistent with the principle of functional transparency (Frajzyngier & Shay 2003).

- (18) ganháʃten g əʃʒʒən n ankán / tyátt gatəʃʃ ləsləf /
ga-n-háʃt-en g əʃʒʒən n ankán / tyátt
 IRR-SBJ.1PL-put\AOR-DO.3PL in one\M GEN place\SG.M / goat\SG.F
ga-tə-ʃʃ ləsləf /
 IRR-SBJ.3SG.F-eat\AOR alfalfa\SG.M /
 ‘We will put them in one place, the she-goat will eat the alfalfa.’ (Siwi)

When both A and O are lexically expressed, AVO is the only possible construction also if the verb is labile (transitively used).

- (19) itádəm gifətkən albáb
itádəm g-i-fətk-ən albáb
 people\PL IRR-SBJ.3-open\AOR-PL door\M
 ‘People will open a door’ (Siwi)

To sum up concerning grammatical relations, here are the possible constructions in Kabyle and Siwi, with one or two nouns, outside and inside the prosodic boundary:

Position (prosodic group of the verb)		Kabyle	Siwi
outside		left- and right-dislocation	
inside	one noun	V, VO, VS, V _{cl} A, SV, AV _{cl} , OV _{cl}	V, VO, VS, V _{cl} A, SV, AV _{cl} , OV _{cl}
	two nouns	OVA, VAO, VOA, AVO	AVO

As we can see from this list, the main difference between the two languages is the possibility, for Kabyle, to have more constructions when both Transitive Subject (A) and Object are lexically expressed.

2.3 Conclusion on grammatical relations

The presence of the state distinction has impact on grammatical relations: it allows more constructions in Kabyle than in Siwi, when two arguments are expressed by full nouns, in a transitive construction. The state distinction is also crucial when constructions only involve one noun.

For labile constructions, Kabyle allows the coding of grammatical relations through the state opposition while Siwi does it only through a strict word order: when the labile verb has no direct object clitic, preverbal position codes S, postverbal position codes O.

Those constructions will now be analyzed one by one, at discourse level, in order to see if the restriction in possible word orders influence the type of information structure functions coded (i.e. marked by a specific construction) in both languages.

3. Information structure

While much has been written on the formal properties of constructions involving preverbal vs postverbal subjects in Berber (Basset 1950; Galand 1964, 2002 and 2010; Chaker 1983; Leguil 1992; Lafkioui 2010, 2014) studies focusing on information structure functions are rare, except for a series of papers by Mettouchi on Kabyle (Mettouchi 2003a, 2003b, 2005, 2007a & b, 2008, 2013, 2015 & 2018), work by Kuningas (2004) on Kabyle as well; Leguil (1986: 115–120), Souag (2013: 219–222) and Schiattarella (2015: 279–295) on Siwi, Mettouchi & Fleisch (2010) on

Kabyle and Tachelhit, and Kossmann (2016) on Figuig Berber. Most of those studies are more concerned with the new vs. old information conveyed by the position of nominal subjects, and less with the study of the variety of constructions attested in discourse and their functions. However, all the abovementioned papers point to the central role of word order in the coding of information structure values.

The novel character of the present study, and of the empirical approach developed by Mettouchi since 2011, is that actually attested constructions are studied in their environments, without any prior assumption concerning their information structure value. Thus, all the actually encountered constructions involving verbs and their arguments, and analyzed in Part 2 under the angle of grammatical relations, are now investigated under the angle of their informational value in discourse, based on the interpretation of the previous and following context.

As a result of that study, we present in 3.1 and 3.2 the constructions that have the same functions in Kabyle and Siwi, and in 3.3 the constructions that have different functions or exist in only one language.

3.1 Same constructions, same functions: Noun outside the prosodic boundary

3.1.1 *Function of N (+F0 rise) [$V_{aff(cl)}(X)$]*

This construction is characterized by a noun appearing before the prosodic boundary of the prosodic group containing the verb. This noun can represent any grammatical relation and is coreferent to the corresponding (subject, direct object, or indirect object) bound pronoun inside the intonation unit. The boundary tone at the end of the noun preceding the prosodic boundary is rising, as shown by the measurement of the fundamental frequency of the voice (F0), thanks to Praat.

We will call the function of this construction ‘subtopic shift’ because there is a shift in perspective with respect to what is introduced in the previous discourse.

In Kabyle example (20), the speaker shifts from the episode of the humiliation of the brothers to the episode of their revenge: the humiliation comes from the hero depriving each of his brothers of their eye, ear and little finger in exchange for partridges for them to show their father that they were successful at hunting; the revenge is exercised by the brothers through having the father send his youngest son, the hero, to the ogress, under false pretexts, so that he will be eaten. The noun *tsərjəl*, ‘ogress’ is before the prosodic group of the verb, and announces the new episode centred around luring the father into sending the hero to the ogress, Mother Nuja.

- (20) amkaras xədmən wajθmas aʔamina / imisnixðəm akkənakkən / əβyan aθawin
 antəʃ tsəɾjəl // tsəɾjəlagi / θəlla tsa# tɬsin igsətɬsən // tɬsamyart tɬsətɬs // nnanas
 aβah / ssəndahəndd βaβasnni // nnanas aβah / innajas a:: / əfuyammi // nnanas
 a# ilaq annuh ansəqsi afimmanuza // nnanas amatswalið^s aβaβa / θəsʔaθiqiʃin
 jəmmanuza / alukan ačidjawi jiwəθaʔmar // akθsəðhaj / nnanas aʃkint //
 amk ara=as xədm-n wajtmas a Amina /
 how REL.IRR=IO.3SG make\AOR-SBJ.3PL.M brother\ANN.PL.M VOC Amina /
 imi=asn i-xdəm akkən akkən /
 when=IO.3PL.M SBJ.3SG.M-make\PFV thus thus /
 bya-n ad=t=awi-n
 want\PFV-SBJ.3PL.M POT=DO.3SG.M=bring\AOR-SBJ.3PL.M
 ad=t t-əʃʃ tɬsəɾjəl //
 POT=DO.3SG.M SBJ.3SG.F-eat\AOR ogress\ANN.SG.F //
 tɬsəɾjəl-agi / t-lla d ta# d tin
 ogress\ABS.SG.F-PROX / SBJ.3SG.F-exist\PFV COP FS COP the_one\SG.F
 i i-sətɬs-n //
 REL.REAL RELSBJ.POS-eat\IPFV- RELSBJ.POS //
 d tamyart t-sətɬs //
 COP old_woman\ABS.SG.F SBJ.3SG.F-eat\IPFV //
 nna-n=as a baħ /
 say\PFV-SBJ.3PL.M=IO.3SG VOC daddy /
 ssəndah-n=dd baba-s-nni //
 talk\CAUS.IPFV-SBJ.3PL.M=PROX father\ABS.SG.M-KIN.3SG-SHREF //
 nna-n=as a baħ /
 say\PFV-SBJ.3PL.M=IO.3SG VOC daddy /
 i-nna=as a:: /
 SBJ.3SG.M- say\PFV=IO.3SG hesit /
 əfu a mmi //
 what VOC son\ABS.SG //
 nna-n=as a# ilaq ad n-ruħ
 say\PFV-SBJ.3PL.M=IO.3SG FS deontic POT SBJ.1PL-go\AOR
 ad n-səqsi əf jəmma Nuza //
 POT SBJ.1PL-tell\AOR on mother\ANN.SG.F Nuza //
 nna-n=as amər ad t-wali-ð /
 say\PFV-SBJ.3PL.M=IO.3SG if POT SBJ.2-see\AOR-SBJ.2SG /
 a baba /
 VOC father\ABS.SG.M /
 t-sʔa tiqiʃin jəmma Nuza /
 SBJ.3SG.F-possess\PFV girl\ABS.PL.F mother\ANN.SG.F Nuza\ANN /
 lukan ad=ak=dd j-awi jiwət aʔmar //
 if POT=IO.2SG.M=PROX SBJ.3SG.M-bring\AOR one\F Aʔmar\ANN //

ad=ak t-ssadhaj /
 POT=IO.2SG.M SBJ.3SG.F-entertain.CAUS.IPFV /
nna-n=as ask=itnt //
 say\PFV-SBJ.3PL.M=IO.3SG be_beautiful=3PL.F //

‘How would the brothers react, Amina? Since he had done that to them? They wanted to take him to the ogress to be eaten. **This ogress, she was, someone who ate (people)**. An old woman who ate (people). They said to their father, they convinced him. They said, Dad, he said, what, my son? They said, we must go and visit Mother Nuja. They said, if only you saw, Dad, she has daughters, Mother Nuja, what if Amar were to bring you one? She would entertain you, they said, they are beautiful.’ (Kabyle)

This construction has the same function for Siwi and is particularly frequent when a series of events are enumerated, as in procedures or recipes, and the speaker shifts from one subtopic to another.

In (21), the speaker introduces the new subtopic, namely a dish called *tagella n tini*, then he takes up this referent again in a left-detached construction and finally he gives more details about it (like how to cook it and how or when to eat it), in the following intonation units. Thanks to this construction, there is a subtopic shift from the previous part of the discourse, where the speaker was explaining how to prepare a different dish, listing all the ingredients and the way to mix all together.

- (21) *yúnnax nátfju əx^wrá smijətənnəs tagəllá n tini / tagəllá n tini / jəssəmmúntət /*
yúr-nax nátfju əx^wrá smijət-ənnəs
 at-1PL food\SG.M another name\SG.F-POSS.3SG
tagəllá n tini /
 tagella\SG.F GEN date\SG.F.COL /
tagəllá n tini / jə-ssəmmú-n-tət /
 tagella\SG.F GEN date\SG.F.COL / SBJ.3-COOK\IPFV-PL-DO.3SG.F /
 ‘We have another dish (lit. food) called *tagella* of date(s), **the *tagella* of date(s)**, they cook it...’ (Siwi)

That example is part of a recording where the speaker talked about the topic of food in Siwa, listing all the dishes that Siwi people prefer. After an initial general introduction, he shifted from one dish to another, usually using the left-detached construction.

3.1.2 Function of $[V_{\text{aff}(cl)}(X)]N$

The function of right dislocation is to reactivate a referent, in both languages. In Kabyle the relevant noun is in the annexed state. The referent is often reactivated because it has special importance in the narrative, and often also in order to become the topic of the following intonation units (Mettouchi 2015 & 2018).

In the following Kabyle example (22), we see that from the topic Amina Mettouchi set for this recording session, the speaker planned her contribution, and underlined the fact that this concerned Kabyle women (not people in general, or women other than Kabyle ones). Then the discourse develops about this referent.

- (22) *ifi a::: ##addð hkuy / amçi / tsifn ziç / lxalaθ lləqβajəlnnəy / aməç θamɿiθən*
ziç / jər θəmɿiθtura / əfu llxilaf igəllan //
ifi a::: ## ad=dd hku-y / amk i /
 so hesit ## POT=PROX tell\AOR-SBJ.1SG / how REL.REAL /
ʔsif-n zik /
 live\IPFV-SBJ.3PL.M long_ago /
lxalat n lqbajl-nnəy /
 woman\ANN.PL.F GEN kabyle_tribe\ANN.PL.M- POSS.1PL /
amk tamsift n zik /
 how life\ABS.SG.F GEN long_ago /
gər tamsift n tura /
 among life\ANN.SG.F GEN now /
əfu n lxilaf i
 what GEN preference\ANN.PL REL.REAL
i-lla-n //
 RELSBJ.POS-exist\PFV-RELSBJ.POS //
- ‘so, I will talk about the way people lived in the old days, **the Kabyle women**; how life was in those days, as compared to now, what injustice there was.’
 (Kabyle)

The noun after the prosodic group of the verb expands on the referent of the corresponding bound pronoun *-n*, thus specifying the fact that the referent for that pronoun is actually female (although the pronoun is masculine/neutral), and developing the semantics and pragmatics associated to that referent: the Kabyle women, with whom the speaker identifies, as is shown by the use of *-nnəy* (first plural masculine/neutral possessive affix).

In the Siwi example (23), a referent (Hassnin) is introduced at the very beginning of the narration. The speaker continues by presenting the other characters of the story, namely Hassnin’s wife and his two sons and then explains their destitute condition.

With the right-detached construction that follows, the speaker not only reactivates the referent presented before, but also specifies that Hassnin is the one who got sick (not one of his sons, for example), just to be sure that the listener follows and understands the narration. As in Kabyle, the discourse that follows unfolds around this reactivated referent: he stays at home and one of his sons tries to find a way to heal him.

- (23) *már̄ra dí agg^wíd smijətónnəs Hássnin / yúrəs sən n ikəb̄bán d yúrəs taltí / ifəqranán / j̄safīna g agbán imánsən // əɟɟə́n n áddor̄ / juṭón / Hássnin / jəngár jətt̄isa g ágbən //*
már̄ra dí agg^wíd smijət-ónnəs Hássnin /
 once EXIST man\SG.M name\SG.F-POSS.3SG Hassnin /
yúr-əs sən n ikəb̄bán d yúr-əs taltí /
 at-3SG two GEN son\PL.M and at-3SG woman\SG.F /
ifəqranán / j-ɣafī-n-a g agbán imán-nsən //
 poor\PL.M / SBJ.3-live\PFV-PL-RES in house\SG.M REFL-POSS.3PL //
əɟɟə́n n áddor̄ / j-uṭón / Hássnin /
 one\M GEN time.SG.M / SBJ.3SG.M-get_sick\PFV / Hassnin /
jə-ngár jə-t̄tis-a g ágbən //
 SBJ.3SG.M-stay\PFV SBJ.3SG.M-rest\PFV-RES in house\SG.M //
 ‘Once upon a time there was a man called Hassnin. He had two sons and a wife, they were poor, they lived in a house of their own. Once, he got sick, Hassnin. He stayed at home, resting.’ (Siwi)

3.2 Same constructions, same functions, noun inside the prosodic group containing the verb: Function of V(O)

When the verb (transitive or intransitive) appears alone or with DO or IO clitics, or when it is followed only by a nominal direct object (transitive verb), there is (discourse) topic continuation. This construction is the default one in syntax (Mettouchi 2015 & 2018) – there is no topic shift and the narration is just carried forward. It is a very common construction in languages where personal affixes on verbs bear argumental status: the verb alone with its personal affix constitutes a complete clause. Even if there are several referents at that point in the discourse, nouns do not necessarily appear in the clause. This function has been studied for Kabyle by Mettouchi (2005, 2007a, 2007b, 2008, 2015, 2018).

In Kabyle example (24), the discourse topic is the young hero’s preparation of his escape: by giving his mule some grain himself, he ensures that the ogress won’t trap him with her magical powers:

- (24) *iddmədd nasma / jəfkats iwu# ## jəbb^oits guxxam / atsjəfk iwsərðunis // atsjəf*
ðinna //
i-ddəm=dd nasma /
 SBJ.3SG.M-grasp\PFV=PROX grain\ABS.SG.F.COL /
i-fka=tt iwu
 SBJ.3SG.M-give\PFV=DO.3SG.F FS ##
i-wwi=tt i wəxxam /
 SBJ.3SG.M-bring\PFV=DO.3SG.F LOC house\ANN.SG.M /

ad=tt j-əfk i usərdun-is //
 POT=DO.3SG.F SBJ.3SG.M-give\AOR DAT mule\ANN.SG.M-POSS.3SG //
ad=tt j-əffɔ dinna //
 POT=DO.3SG.F SBJ.3SG.M-eat\AOR there //
 ‘he took some grain, he gave it to the mu-, he took it to the house, to give it to his mule. So that the mule would eat it there.’ (Kabyle)

A secondary, non-protagonist, inanimate referent, *naɣma* ‘grain’, is introduced through the VO structure, and then a series of actions is described in chronological order, mostly with bound pronouns, unless the expression of recipient or location is needed.

Siwi example (25) involves two participants, an old woman and the children she is addressing, and is about telling stories to children. Both referents appear as bound pronouns because there is no discourse topic shift in this passage. The speaker goes forward in the narration, adding new information, but the topic is always linked to the practice of storytelling, both from the point of view of the storyteller or her addressee.

- (25) *əntátət t-šəmmar yúr-əs əttriqt-ənnəs / ɣáɣli / jáɣni mák əddəgən / əttəmməl tanfás námma lawqát / mák j-ənɣən-ín-a / xɣás j-šəmmár-ən tanfás / iqəlqən af tanfás / gǵəbdun aṭṭəbbəl d wíhin / d ammi tifaɣrət /*
əntátət t-šəmmar yúr-əs əttriqt-ənnəs /
 IDP.3SG.F SBJ.3SG.F-do\IPFV at-3SG system\SG.F-POSS.3SG /
ɣáɣli / jáɣni mák ə(t)-ddəgən /
 original / I_mean when (SBJ.3SG.F)-tell\IPFV /
ət-təmməl tanfás námma lawqát /
 SBJ.3SG.F-say\IPFV tale\PL.F or sometimes /
mák j-ənɣən-ín-a / xɣás j-šəmmár-ən tanfás /
 when SBJ.3-sit_down\PFV-PL-RES / stop SBJ.3-do\IPFV-PL tale\PL.F /
i-qəlq-ən af tanfás /
 SBJ.3-get_bored\PFV-PL on tale\PL.F /
g-ǵəbdu-n aṭṭəbbəl d wíhin /
 IRR-SBJ.3-start\AOR-PL play_drums\VN and whatchamacallit /
d ammi tifaɣrət /
 and say\VN song\SG.F /
 ‘She had her system indeed, an original one, I mean when she talked, she told tales or sometimes, when they sat down, they stopped with tales, they got bored with tales, they would start to play drums and whatchamacallit, and say a small song’ (Siwi)

3.3 Different form-function mappings

3.3.1 *Function of the noun(s) in postverbal position*

As we already mentioned, Kabyle allows two nouns after the verb while Siwi doesn't.

For this construction we have, in Kabyle:

$$[V_{\text{aff}}\text{NN}] = \text{VAO/VOA}$$

$$[V_{\text{aff}}\text{N}] = \text{VS/VA}$$

The noun in the immediate postverbal position is in the annexed state (subject) but can also be preceded or followed by a noun in the absolute state (direct object).

In Siwi, there are less possibilities:

$$[V_{\text{aff}}\text{N}] = \text{VS/VA}$$

For those constructions, in both languages, the function can be called 'topicalization of an event or state' and it is typically found in a narrative sequence. The event or state are presented as new and promoted to topic status. Topicalization is here to be understood as promotion to discourse topic. At the level of the clause, we have what is usually called a *thetic sentence* (the event or situation is seen as a whole).

In Kabyle VOA features topicalization of event with informational focus on A; VAO is a topicalization of event with informational focus on O while VS and V_{cl}A are constructions whose function is to mark an event as happening, to refer to motion, or the coming into existence of a participant, or else to state to the fact that a situation is taking place. Unlike referent reactivation, topicalization of an event does not concern entities but events or situations.

In example (26), the opening clause is a crucial, pivotal event on which the whole following sequence rests: only when the ogress falls asleep can the hero and his brothers flee the house.

- (26) *jəbb° its naddam* / θjən // [long pause] imi θjən aʔamina / jərfəd̩d̩ að°ənʒirnni
 bb° aman jəhman / issurjit afsəβsa θəqʃifinənni //
jə-wwi=tt *naddam* / *t-gən* //
 SBJ.3SG.M-bring\PFV=DO.3SG.F *sleep*\ANN.SG.M / SBJ.3SG.F-sleep\PFV //
imi t-gən *a Amina* /
 when SBJ.3SG.F-sleep\PFV VOC Amina /
i-rfəd̩=dd *aðənʒir-nni* *n*
 SBJ.3SG.M-hoist\PFV=PROX pot\ABS.SG.M-SHREF GEN
waman i-hma-n /
 water\ANN.PL.M RELSBJ.POS-be_hot\PFV-RELSBJ.POS /
i-ssurəg=t *af səβsa*
 SBJ.3SG.M-be_poured\CAUS.PFV=DO.3SG.M on seven
təqʃifin-nni //
 girl\ANN.PL.F-SHREF //

'She fell asleep (lit. 'sleep took her'), she slept. When she was asleep, Amina, he lifted the pot of hot water, and he poured it on the seven girls.' (Kabyle)

Unlike topic shifts, which only indicate a bifurcation in the storyline, topicalization of events or situations are highly foregrounding structures in Kabyle (Mettouchi 2015: 129).

In Siwi, the function is the same. In (27), taken from a folktale, there are two cases of VS constructions. The first topicalized event is the arrival of the ogre that caused the abduction of the girl. Then, a new event is promoted, again marked by VS: the arrival of the Bedouins. The promotion of this new event is important, because the Bedouins will help the main character to find the kidnapped girl: once they arrive, they give information about the ogre's castle, where the girl is possibly hidden.

- (27) *jəmráq amzá / jəʃʃjət / jəflá // amsók jusánd iʃəryénən s bɪd /*
jə-mrɑq amzɑ / jə-ʃʃj-ét /
 SBJ.3SG.M-reach\PFV ogre\SG.M / SBJ.3SG.M-take\PFV-DO.3SG.F /
jə-flɑ // ams-ók
 SBJ.3SG.M-leave\PFV // thus-2SG.M
j-us-ánd iʃəryénən s bɪd /
 SBJ.3-come\PFV-PL bedouin\PL.M from far /
 'An ogre came and took her, he left. So the Bedouins came from far away.'
 (Siwi)

$V_{\text{aff}(\text{cl})}$ A order is also found in Siwi for the same function, even if, as already mentioned, the postverbal subject of a transitive verb is quite rare.

In the following example taken from a folktale, the storyteller talks about a poor girl who struggles to find food for herself and her mother. Every time she finds it, a cat eats everything. Being desperate and angry at this cat, she starts sitting in front of the house of a sultan, hoping that his son will eventually notice her, which is something that finally happens:

- (28) *jəzrét ɖír n sáltan / jəqqádet i əlqáʃr / jəndʒfét //*
jə-zr-ét ɖír n sáltan /
 SBJ.3SG.M-see\PFV-DO.3SG.F child\SG.M GEN sultan\SG.M /
jə-qqád-et i əlqáʃr /
 SBJ.3SG.M-take\PFV-DO.3SG.F to castle\SG.M /
jə-ndʒf-ét //
 SBJ.3SG.M-marry\PFV-DO.3SG.F //
 'The son of the sultan saw her, he took her to the castle and he married her.'
 (Siwi)

This new event, featuring the $V_{\text{aff}(\text{cl})}$ A order, is a pivotal event in the storyline: after the son of the sultan saw the girl and married her, she was able to live a good life and forget about her past.

3.3.2 Function of $[NV_{aff}(N)]$ in Kabyle

This construction is characterized by a noun preceding a verb that in turn can be followed by another noun. Any noun in preverbal position is obligatorily in the absolute state.

This construction is realized:

SV/ OV / AV_c/ AVO/OVA

It is used as backgrounding for further developments, when a salient preceding situation is recapitulated, so that the listener grasps the whole situation and its importance for the current discourse (see Mettouchi 2015, & 2018). It is used in narratives as well as dialogues.

In this passage of her discourse about Kabyle women, after having given a few examples of current misbehavior, in particular of women ‘marrying’ men on the internet, the speaker focuses on the old days, where people behaved in a more decent way according to her, and she summarizes this by stating that the traditional Kabyle woman had a sense of honor.

(29) *ziçnni θamsiθn̄ni θəlla lhər̄ma / θamt̄t̄uθ lləqβajəl θəssa nnif /*

zik-nni tamsift-nni

long_ago-SHREF life\ABS.SG.F-SHREF

t-lla lhər̄ma /

SBJ.3SG.F-exist\PFV good_reputation\ANN.SG.F /

tamt̄t̄ut n lqβajl

woman\ABS.SG.F GEN kabyle_tribe\ANN.PL.M

t-sa nnif /

SBJ.3SG.F-possess\PFV pride\ABS.SG.M /

‘In the past, in that life, there was good reputation, the Kabyle woman had a sense of honor.’ (Kabyle)

This construction is not to be confused with the left-detached construction: the noun preceding the verb is inside the prosodic group of the verb, doesn’t have a rising final intonation. The information structure function is not (sub-)topic shift, there is no new episode or development afterwards; instead, the NVN structure is backward-looking and summarizes what was said before.

3.3.3 Function of $[N_{aff}V]$ in Siwi

This order is used for pragmatic dependency or comment. With this construction, the speaker gives an explanation or comments about the previous intonation unit. There is dependency between what is introduced by this construction and what was said previously.

In example (30), from a folktale, the speaker talks about two children who, kidnapped by an ogre when they were small, arrived at their father's wedding. When he asked them who they were, they gave an explanation for their absence, in the form of an AV construction:

- (30) ənfni tərɰawənnək / amzǎ jəʃʃjanáxa /
 ənfni tərɰawén-nək /
 IDP.1PL children-POSS.2SG.M /
 amzǎ jə-ʃʃj-anáx-a /
 ogre\SG.M SBJ.3SG.M-take\PFV-DO.1PL-RES /
 'We are your children, an ogre took us.' (Siwi)

Just like for a transitive verb, a noun can also precede an intransitive verb and the function is always to comment, recapitulate or give explanations about what has been said before.

The following example is taken from a folktale about a couple and their seven daughters. Those girls were found in the garden of an ogress, who took them with her.

With example (31), the speaker comments on the request made by the ogress to have one of the girls cooked. The mother is supposed to obey the ogress, but instead she goes to the desert to find an animal to cook, in order to mislead the ogress.

- (31) áwwəl jóm təmmás i ágg^wid / já hamús / xsix gasəmmṭi tləffǎnnək tazəwwárt
 // taltənnəs tǎh i ʃʃáhɰa / tkáttras tfunást təmmúta n tazəwwárt /
 áwwəl jóm tə-mṭ-ás i ágg^wid /
 first day\SG.M SBJ.3SG.F-say\PFV-IO.3SG DAT man\SG.M /
 já hamús / xsí-x ga-səmmṭ-i
 VOC Hamus / want\PFV- SBJ.1SG IRR-cook\AOR-SBJ.2SG-IO.1SG
 tləffǎ-nək tazəwwárt //
 girl\SG.F-POSS.2SG.M big\SG.F //
 talt-ənnəs t-ǎh i ʃʃáhɰa /
 woman\SG.F-POSS.3SG SBJ.3SG.F-go\PFV to desert\SG.M /
 t-káttr-as tfunást tə-mṭút-a n
 SBJ.3SG.F-bring\PFV-IO.3SG cow\SG.F SBJ.3SG.F-die\PFV-RES GEN
 tazəwwárt /
 big\SG.F /
 'The first day the ogress said to the man: "Oh Hamus, I want you to cook for me your big girl." His wife went to the desert, she brought her a dead, big cow.'
 (Siwi)

What is important for the speaker is not the action of going to the desert, but the fact that the mother's going to the desert is a discourse comment on the ogress's

request. This is made clear also in the following intonation units, where the mother goes to find an animal each time the ogress requests to eat another girl.

The dependency can also be syntactic. The subject precedes the verb in complement clauses introduced by the complementizer *anni*:

- (32) *dí itádəm itəmmən anni tsiwət látəffay af fáli /*
dí itádəm i-təmmən-an anni tsiwət
 EXIST people\PL.M SBJ.3-say\IPFV-PL COMP siwi\SG.F
lá-təffay af fáli /
 NEG-SBJ.3SG.F-go_out\PFV on citadel\SG.M /
 ‘There are people who say that a Siwi woman never went out from the citadel.’
 (Siwi)

3.3.4 Function of $[NV_{aff}N]$ in Siwi

As already mentioned, when a transitive noun has both its subject and object lexically expressed, the only attested order in Siwi is AVO.

Because there is no alternative order whenever two nouns are expressed, there is no univocal function linked to this order.

This is shown by the fact that this order is compatible with different and contradictory contexts:

1. Dependency

This order recapitulates the situation described in the previous sentences or comments on them. This function is consistent with the function of SV, AV_{cl} seen before, but here the direct object is expressed and it must follow the transitive verb.

In Example (33), after having introduced the main characters of the tale and their feelings for each other, the speaker recapitulates with AVO, which is a comment on the preceding clauses:

- (33) *dí əɕɕəən smijətənnəs ɕmíl / tləjʃfa smijətənnəs ɕmíla / jənmár ihhəbbən*
əzársən / ɕmíl jəxsá gíway ɕmíla //
dí əɕɕəən smijət-ənnəs ɕmíl /
 EXIST one\M name\SG.F-POSS.3SG Jmil /
tləjʃfa smijət-ənnəs ɕmíla /
 girl\SG.F name\SG.F-POSS.3SG Jmila /
jə-nmár i-hhəbb-ən əzár-sən /
 SBJ.3SG.M-do\PFV SBJ.3-love\IPFV-PL between-3PL /
ɕmíl jə-xsó g-í-way ɕmíla //
 Jmil SBJ.3SG.M-want\PFV IRR-SBJ.3SG.M-marry\AOR Jmila //
 ‘There is one (guy) called Jmil, (while) the girl is called Jmila. They loved each other. Jmil wanted to marry Jmila.’
 (Siwi)

2. No dependency

When there is only one noun, the construction is VS or $V_{cl}A$, but when there are two nouns, since VNN is not a possible order in Siwi, grammatical constraints override information structure ones, and the AVO structure is used in this context too.

In the following example taken from the same folktale as the previous one, Jmil finds his beloved in the ogre's castle and hides in a room. Once the ogre leaves, a new event takes place: Jmil takes Jmila and finally they can leave the castle.

- (34) *hájja xér ámza gilhqánax / jəmmás máfi / jəməár wihin / ɟmíl jəqqád ɟmíla / jəflən /*
hájja xér ámza g-i-lhq-ánax /
 come_on or ogre\SG.M IRR-SBJ.3SG.M-reach\AOR-IO.1PL /
jə-əm-ás máfi / jə-əməár
 SBJ.3SG.M-say\PFV-IO.3SG OK / SBJ.3SG.M-do\PFV
wihin /
 whatchamacallit /
ɟmíl jəqqád ɟmíla / jə-fl-ən /
 Jmil SBJ.3SG.M-take\PFV Jmila / SBJ.3-leave\PFV-PL /
 ‘‘Let’s go or the ogre will reach us’’. (Jmil) replied: ‘‘OK’’. So, so... **Jmil took Jmila, they left.** (Siwi)

3.4 Summary

Because Kabyle marks the state distinction on nouns, word order is freer so there are more possible combinations: there is no threat to the transparency of grammatical relations.

Based on the possible constructions actually attested in Kabyle, information structure functions within the prosodic group of the verb are separable into two groups (Mettouchi 2015, this paper and 2018):

1. VS, $V_{cl}A$, VAO, VOA (verb-initial): new episode in narrative sequence (forward-looking)
2. SV, AV_{cl} , AVO, OV_{cl} , $OV_{cl}A$ (verb-second): recapitulation or comment (backward-looking)

In dependent clauses, the order is strictly VS, $V_{cl}A$, VAO, VOA so this construction has no information structure value in that syntactic context.

In Siwi, word order is less free than in Kabyle, which is accounted for by the fact that there is no state distinction. Indeed, Siwi allows only one combination (AVO) if there are two nouns in a clause, thus avoiding ambiguity in the interpretation of grammatical relations. This order being constrained, it has no single information structure function.

If there is only one noun, we have the following constructions:

1. VS, $V_{cl}A$: new episode in narrative sequence
2. SV, AV_{cl} : dependency (pragmatic or syntactic). Pragmatic dependency refers to relationships between main clauses, while syntactic dependency refers to the relationship between matrix and subordinate clause. OV_{cl} is strongly avoided and only present once in the whole corpus: the function of this construction is therefore difficult to establish.

4. Implications and conclusions

Our study is non-aprioristic in that it does not assume that nouns are necessarily marked for grammatical relations. This claim is not new, and has been made for Berber by Galand (1964), for pronominal-argument languages in general by Jelinek (1984), and for a number of Amerindian languages by Mithun (2003). In Kabyle as in Siwi, the only non-ambiguous argument markers are the bound pronouns, and nouns can either be simply coreferent to bound pronouns, or be additionally coded as nominal subjects or objects in some environments. Those environments are characterized by the fact that they allow no ambiguity in the computation of grammatical relations. Unlike the combinations of state and word order we analyzed in details in Part 2, for Kabyle, the role of gender-number marking ('agreement') is not unambiguous, as shown in even more details in Mettouchi (2018). This potential ambiguity is true as well for Siwi. And since we do not want to rely on extra-linguistic inferences for the computation of grammatical relations, we claim that noun phrases can only be computed as subjects and direct objects in some contexts, which are detailed below. Of course coreference between the noun and the gender and number information contained in one of the pronouns bound to the verb is necessary, but we claim that it is not sufficient.

In Kabyle, within the prosodic group of the verb, the postverbal position is not a coding means in itself: if the noun in that position is in the absolute state it is computed as the object, if it is in the annexed state it is computed as the subject. The preverbal position is not a coding means in itself either, and since only the absolute state is encountered in that position, state cannot discriminate between subject and object. A direct object clitic could disambiguate, but as we have already seen, identity in gender and number does not necessarily entail coreference between pronoun and noun.

In Siwi, within the prosodic group of the verb, the possible constructions with the noun in preverbal position are the same as in Kabyle. As for the postverbal position, it codes the object *if and only if* the verb is transitive or labile (transitively

used) and has no direct object clitic, and it codes the subject for inherently intransitive verbs. Postverbal position codes subject also for strictly transitive verbs, *if and only if* it bears the direct object clitic.

For both languages, it is therefore not the case that all nouns can always be coded for grammatical role. Apart from the constructions mentioned above, subject or object interpretation of the role of nouns in Kabyle or Siwi solely rely on identity of gender/number information on noun and pronoun, and extra-linguistic inferences. This is particularly true for left- and right- detached constructions.

There is a difference between unambiguous coding of grammatical relations, and probabilistic interpretation. Our paper only considers unambiguous coding, not inferences.

Having listed the constructions attested in authentic spoken data in Kabyle and Siwi, we have shown that the fact that some constructions are encountered in Kabyle but not in Siwi can be explained by the principle of functional transparency. In other words, when discrimination between subject and object is impossible, which is the case in Siwi if there are two nouns after the verb, or if the order with two nouns is any other than AVO, then those constructions are not attested. The consequence is that those constructions are not available either for information structure coding.

Going through the attested constructions in both languages, we have seen that as far as information structure is concerned, we have (1) identical constructions with identical information structure functions, (2) identical constructions with different information structure functions, (3) functions coded only in one language and not the other and (4) constructions constrained by transparency of grammatical relations (AVO in Siwi) unavailable for one single information structure function.

While (1) and (2) could be ascribed to language – internal similarities and differences in the way functions are linked to constructions, (3) and (4) are a by-product of the fact that less constructions involving nouns are possible in Siwi than in Kabyle, a situation in turn triggered by the fact that Siwi lacks a coding means that is available in Kabyle and participates in the coding of grammatical relations, even if it is not in itself a marker of grammatical relation: the state opposition.

Our paper demonstrates that the lack of a morphological distinction, namely here state, has deep impact on grammar and information structure even if that distinction is not *per se* directly involved in the coding of grammatical relations or information structure. It also shows that similar structures in closely related languages may have very different functions.

Abbreviations

ABS	absolute state	LOC	locative
ANN	annexed state	M	masculine
AOR	aorist	NEG	negation
ASSOC	associative	PFV	perfective
CAUS	causative	PL	plural
COL	collective	POS	positive
COM	comitative	POSS	possessive pronominal paradigm
COMP	complementizer	POT	potential
COP	copula	PROX	proximal
DAT	dative preposition	REAL	realis
DEONTIC	deontic auxiliary	REFL	reflexive
DO	direct object pronoun	REL	relator
F	feminine	RELSBJ	subject relativization circumfix
FS	false start	RES	resultative
GEN	genitive	SBJ	subject pronominal paradigm
HESIT	hesitation	SG	singular
IDP	independent pronoun	SHREF	shared referent marker
IPFV	imperfective	VOC	vocative
IRR	irrealis	VN	verbal noun
IO	indirect object	/	non-terminal boundary
KIN	kinship pronominal paradigm	//	terminal boundary

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