

Contents

Articles

- Amina Mettouchi and Zygmunt Frajzyngier*
A previously unrecognized typological category: The state distinction in Kabyle (Berber) 1
- Egbert Fortuin*
The construction of excess and sufficiency from a crosslinguistic perspective 31
- Terry Regier, Naveen Khetarpal, and Asifa Majid*
Inferring semantic maps 89

Review Articles

- Maria Koptjevskaja-Tamm and Henrik Liljegen*
Language typology and syntactic description 107
- Larry M. Hyman*
Word accentual patterns in the languages of the world 157

Book Reviews

- An introduction to linguistic typology*, by Viveka Velupillai
reviewed by *Jae Jung Song* 173
- Quantification: A cross-linguistic perspective*, edited by Lisa Matthewson
reviewed by *Jeffrey Heath* 177
- What's in a verb?* edited by Grażyna J. Rowicka & Eithne B. Carlin
reviewed by *Michael Fortescue* 183

A previously unrecognized typological category: The state distinction in Kabyle (Berber)

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Abstract

The study addresses the functional distinction between the annexed and absolute states of nouns, a controversial issue in Berber linguistics. It is demonstrated that the annexed state provides the specific value for a grammaticalized meaning encoded earlier in the sentence. The absolute state carries no function within the grammaticalized domains of the language. The importance of this study for linguistic typology is that it demonstrates the existence of a coding system on noun phrases that is not related to grammatical functions, semantic functions, or information structure.

Keywords: annexation, Berber, grammatical relations, grammaticalization, inflection, Kabyle, noun phrase, state, syntax

1. Introduction

1.1. Two states

This study describes a type of morphological coding that has so far not been recognized as such in descriptions of individual languages, in the theoretical literature, or in typology. At the heart of the study is a long-standing controversy in Berber linguistics, which is also of considerable interest to typology and linguistic theory, concerning the function of the two states (“annexed” and “absolute”) of nouns in Kabyle (Aikhenvald 1990, 1995; Kossmann 2007; König 2006, 2008; Creissels 2009a, b, to name just the most recent works). Existing work has failed to explain why the two inflectional forms of nouns are used in some constructions and not in others.

The present study accounts for the distribution of the two states by proposing that the absolute state is the default form of the noun and as such has no specific function, while the annexed state has a specific function.¹ The annexed state provides the value (in the logical sense) for the variable in the function grammaticalized in a preceding constituent. A grammaticalized function is a function that has been encoded in the grammatical system of the language, through inflectional or syntactic means. The function we propose has never been described before for Berber or for any other language. Its peculiarity is that it does not apply directly to any one specific component of the grammatical system or to any referent in the cognitive system or non-linguistic reality, but rather to many unrelated components of the grammatical system. The proposed hypothesis explains the deployment of the two forms in a wide variety of constructions.

1.2. *An outline of relevant facts about Kabyle*

In order to understand the nature of the problem, we first present a very brief outline of relevant facts about Kabyle.² Kabyle has the lexical categories noun and verb. The language also has freestanding grammatical morphemes such as prepositions, relational morphemes, and quantifiers, as well as bound grammatical morphemes such as subject and object pronouns, kinship and possessive pronouns, and demonstratives, among others. The coding means in the language include inflectional marking on verbs and nouns, prosodic marking, and linear order. The default position of the verb with subject affix is clause-initial, with noun phrases following the verb. Bound subject pronouns are obligatory regardless of whether a noun that can be interpreted as subject is present or absent in the clause. Modifiers follow the modified constituent, and noun phrases are head-initial. We understand the term “head” as in Bloomfield (1933: 194–202), viz. that part of a phrase that can stand for the whole phrase. We expand on our understanding of the notion “head” later in this study. Kabyle distinguishes masculine and feminine genders and singular and plural numbers.

1. The postulate that the annexed state is derived from the absolute state (Laoust 1920, Basset 1932, Vycichl 1957, Brugnatelli 1996), and that as such the absolute form is morphologically unmarked, is the closest that the previous scholarship has come to postulating the default value for the absolute state.

2. 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. These languages constitute a family within the Afroasiatic phylum. Well-known members of the family are Kabyle (spoken in northern Algeria), Tashelhiyt (or Shilha; spoken in southern Morocco), and Tamashek and Tahaggart (also called Tuareg; spoken in the southern Sahara).

These are marked on pronominal affixes and clitics to verbs, to nouns, and to prepositions, as well as on nouns, numerals, and adjectives.

1.3. *The form and distribution of two states*

A distinguishing characteristic of Kabyle and several other Berber languages is the existence of a system of inflectional marking on the noun, called “states” (annexed and absolute, the terms used in this article); “état libre” and “état d’annexion” in Basset (1945), Galand (2010), Prasse (2010); Construct and Free (Bendjaballah 2011); or “cases” (Aikhenvald 1995; König 2006, 2008; Creissels 2006, 2009a, b; Kossmann 2007).

1.3.1. *Realization of the two states.* The realization of the two states depends on the gender and number of the noun, as represented schematically in the upper part of Table 1. The bottom part of this table is an illustration of the application of the markers to the roots *rgaz* ‘man’ and *qfif* ‘child’ (in the feminine: ‘girl’). Basset (1945), Penchoen (1973a), and a number of other scholars following them assume that there exists an underlying root form that can begin with either a consonant or a vowel.³ The full noun consists of the root plus the state, gender, and number markers as listed above. For other approaches to synchronic derivation see El Moudjahid (1982), Guerssel (1983), and Bendjaballah (2011). Kossmann (2007: 432–433) and Galand (2010: 124–130) give numerous examples of derivational rules, depending on the root type (consonant-initial types, vowel-initial types).

In diachronic approaches, some derive the annexed state from the absolute state (Basset 1932, Vycichl 1957, Brugnatelli 1997), some derive the absolute state from the annexed state (Laoust 1920), and still others derive the two states independently of each other from roots (Prasse 2002, Chaker 1988). The hypotheses proposed in the present study do not depend in any way on the synchronic or diachronic derivation of the two states.

3. For an analysis of these roots within a templatic morphology framework, see Bendjaballah (2011).

Table 1. State alternation in Kabyle: General pattern (top) and examples (bottom). Only underlying forms are given. Syllabification rules which result in schwa insertion are reflected in the examples throughout the article. R stands for "root".

	Masculine		Feminine	
	Singular	Plural ^a	Singular	Plural
Absolute	<i>a-R</i>	<i>i-R-n</i>	<i>t-a-R-t</i>	<i>t-i-R-in</i>
Annexed	<i>w-R</i>	<i>j-R-n</i>	<i>t-R-t</i>	<i>t-R-in</i>
Absolute	<i>a-rgaz</i> 'man'	<i>i-rgaz-n</i> 'men'	<i>t-a-qfif-t</i> 'girl'	<i>t-i-qfif-in</i> 'girls'
Annexed	<i>w-rgaz</i> 'man'	<i>j-rgaz-n</i> 'men'	<i>t-qfif-t</i> 'girl'	<i>t-qfif-in</i> 'girls'

a. In the rare cases where the plural starts with the vowel *a-* instead of the vowel *i-* (e.g., *aman*, 'water'), the annexed state begins with the glide *w-* rather than *j-* (*waman*). This means that the form of the annexed state is not determined only by gender/number per se but also by the phonological structure of the root. The derivation of states is slightly different for nouns that have a radical vowel as part of the root ("noms à voyelle constante", see Basset 1945).

1.3.2. *Distribution of the two states.* Below is the list of constructions in which the two states occur. Each construction is illustrated by an example.⁴

4. For a considerably shorter list for Berber in general, see Kossmann (2007: 431). Examples are presented in the IPA transcription that includes underlying and epenthetic segments, with the following exceptions. Pharyngealized consonants ("emphatics") are transcribed with a subscript dot. Affricates *ts*, *dʒ*, and *tʃ* are transcribed as *ṭ*, *g̣*, and *ç*. If the markers of the absolute or annexed state are separate morphemes, we use a hyphen to separate the state marker from the root (and more generally to mark affix boundaries, whereas clitic boundaries are marked with an equal sign "="):

- (i) *a-rgaz*
ABS.SG-man
'man'

If the state marker is not separable from the root (as is the case for the absolute state of a root starting with a vowel or the annexed state of a feminine noun, which is marked by prefixing the feminine morpheme to the root), we put the state of the noun in square brackets, in accordance with the Leipzig Glossing Rules:

- (ii) *aman* (< *a-aman*)
water[ABS].PL
'water' (Note: liquids are always plurals in Berber)

- (iii) *t-qfif-t*
F-child[ANN]-F.SG
'girl'

The absolute state is used when:

- (i) the noun is the nominal predicate of a nonverbal clause, cf. (1);
- (ii) the noun is the direct object of the verb and the verb has no object suffix, cf. (2);
- (iii) the noun is the complement of some prepositions, cf. (3);
- (iv) the noun precedes the verb, regardless of its grammatical relation or function, e.g., subject (4) or object (5);
- (v) the noun is an attributive modifier of a preceding noun (Kabyle has a single word class translating English nouns and attributive adjectives), cf. (6);
- (vi) the noun is used in a citation form, cf. (7);
- (vii) the noun is used as a vocative, preceded by the particle *a* (before nouns beginning with a consonant) or *aj* (before nouns beginning with a vowel), cf. (8).

- (1) *d a-rgaz*
COP ABS.SG-man
'He is a man.'
- (2) *i-sʃa t-a-qəðʃi-t*
SBJ.3SG.M-possess.PFV F-ABS.SG-herd-F.SG
'He had a herd.'
- (3) *ar t-a-məddi-t*
until F-ABS.SG-evening-F.SG
'See you this evening.'
- (4) *a-mfif jə-wwi=jay=idd yr dagi*
ABS.SG-cat SBJ.3SG.M-bring.PFV=OBJ.1PL=PROX to here
'The cat brought us here.'
- (5) *a-zdduz-nni jə-ttawi=t u-bəħri*
ABS.SG-stick-ANAPH SBJ.3SG.M-take.IPFV=OBJ.3SG.M ANN.M-wind
'(As for) the stick, the wind was moving it.'
- (6) *ad=tt i-səw wə-bruf*
POT=OBJ.3SG.F SBJ.3SG.M-drink.AOR ANN.M-creature
a-mfum
ABS.SG-cunning
'The cunning creature will drink it.'
- (7) *a-xxam*
ABS.SG-house
'house'

When the root starts with a consonant cluster, the annexed state marker *w-* or *j-* is followed by an epenthetic schwa (*wə-rgaz*, *jə-rgazn*), and when it is followed by a single consonant, syllabification rules result in the vocalization of the glide into an *u-* or an *i-* (*u-taxi*, *i-taxijən*).

- (8) *aj a-rgaz!*
 VOC ABS.SG-man!
 'Hey man!'

A noun in the annexed state is used:

- (i) when the noun is interpreted as subject and follows the verb, either immediately or when separated from the verb by other constituents, cf. (9) and (10);
- (ii) when the noun is an object and the verb has an object clitic, cf. (11);
- (iii) after some prepositions, for example, after the genitive preposition *n*, cf. (12);
- (iv) after relational morphemes such as *bu* (MASC) or *m* (FEM) 'possessor of'/'characterized by', *wə* 'son of', *at* 'descendants of', *sut* 'female members of', cf. (13);
- (v) when the noun follows a numeral between one and ten or a higher numeral ending in one to ten, cf. (14);
- (vi) when the noun in the annexed state serves as the subject of the non-verbal predication when it follows the copula in the nominal predication (see Section 4.5), cf. (15).

- (9) *tə-mmut t-qif-t*
 SBJ.3SG.F-die.PFV F-child[ANN]-F.SG
 'The girl died.'
- (10) *ufa-nt t-xədm=ədd t-i-yrif-in*
 find.PFV-SBJ.3PL.F SBJ.3SG.F-do.PFV=PROX F-ABS.PL-pancake-PL.F
t-məttu-t-nni n baba-tsənt
 F-woman[ANN]-F.SG-ANAPH GEN father[ANN]-KIN.3PL.F
 'They found their stepmother (lit. father's woman) cooking pancakes.'⁵
- (11) a. *t-ufa d a-mfif n wə-drar*
 SBJ.3SG.F-find.PFV COP ABS.SG-cat GEN ANN.M-mountain
i=t i-zədy-ən
 REL=OBJ.3SG.M RELSBJ-inhabit.PFV-RELSBJ
wə-xxam-nni
 ANN.M-house-ANAPH
 'She found it was the Mountain Cat who inhabited it, the house.'

5. The structure of this sentence may need additional explanation: the first verb (with 3rd person plural feminine marking) is followed by the verb of the embedded clause with its obligatory subject affix, then by the nominal object of the embedded clause, and finally by the nominal subject of the embedded clause, which is a possessive phrase: 'wife of their father'. Literally, the sentence could have been translated: 'they found (that) their stepmother was cooking pancakes'.

- b. *ad=iji=t j-awi*
 POT=DAT.1SG=OBJ.3SG.M SBJ.3SG.M-take.AOR
w-uffən f⁶ wə-ʒmmaʃ=nni
 ANN.M-jackal ANN.M-herd=ANAPH
 'The jackal would take it, the herd (i.e., would eat the sheep).'
- (12) *t-a-məttu-t-nni n baba-tsənt*
 F-ABS.SG-woman-F.SG-ANAPH GEN father[ANN]-KIN.3PL.F
 'their father's wife'
- (13) *bu t-hanu-ʔ*
 RELAY.M F-shop[ANN]-F.SG
 'the owner of the shop'
- (14) *jiwən wə-qif snat t-qif-in*
 one.M ANN.M-child two.F F-child-F.PL
 'a son and two daughters'
- (15) *d a-guzil wə-qif-nni*
 COP ABS.SG-orphan ANN.M-child-ANAPH
 'That boy is an orphan.'

1.4. Purpose and scope of the study

A list like that in Section 1.3.2, no matter how complete, is just a prerequisite for an analysis; it does not explain why a particular form occurs in a particular construction and why a particular form allows some inferences about meaning rather than others. The main aim of this study is to propose a motivation for the distribution of the two states and to provide evidence for this motivation.

Our hypotheses are based on the notion of grammaticalized function. Each language has a finite set of grammaticalized functions. A grammaticalized function is discovered through the contrast between one form and other forms within the functional domains in the language (Frajzyngier & Mycielski 1998) rather than through the examination of the referent (if any) of the form in external reality or in the cognitive system of the speakers.

The importance of the present study for typology lies in the demonstration that Kabyle, and potentially other Berber languages, has grammaticalized a hitherto unrecognized function which provides the value (in the logical sense) for the variable of the function grammaticalized in a preceding constituent; that the coding of this function constitutes a large part of Kabyle grammar; and that the distinction between nominal subject and nominal object is a by-product of the coding of the function proposed in this study.

6. This slash indicates the presence of a minor prosodic boundary, whose equivalent in the translation is a comma.

Given that our main goal is the presentation of the way the system works synchronically, we confine our study to Kabyle and make no claims about the grammatical systems in other Berber languages, even those that have the annexed-absolute distinction. A study of the grammaticalization of the two states and a comparative study of the evolution of the two states and its effects in other Berber languages is the subject of a different study (in progress). In pursuit of our goal, we first review the existing scholarship on Kabyle and demonstrate that it fails to account for the variety of uses of the state distinction (Section 2). We then present our hypotheses (Section 3) and the supporting evidence (Section 4). Following a summary (Section 5), we examine the implications of the findings for linguistic typology (Section 6).

2. Previous views of the functions of the state distinction

Berberologists have seldom worked on the problem of states from a single-language perspective in Berber, because the main aim of traditional and contemporary studies has been to reconstruct the diachronic development of the state opposition through comparative studies within the language family. Moreover, Berber languages have often been treated as dialects of a single language, because of the focus of most Berber scholarship on morphology, which is quite homogeneous in Berber. This explains why most references dealing with the state opposition do not target a specific Berber language, even though most of them are obviously based on Northern Berber varieties while others are based on Southern varieties. Most of the scholarship on the state opposition is morphologically oriented, and the question of the function of the opposition is generally dismissed, either by arguing that it is a non-functional remnant of a former functional opposition or by simply listing the environments in which the states are deployed, without providing an explanation.

In what follows, we quote the main authors who have proposed hypotheses regarding the function of the state opposition, where Kabyle was implicitly or explicitly included in the study.

Basset (1932: 174, 1952: 26) proposes that the noun in the annexed state has a tight connection and that the noun in the absolute state does not have a tight connection with the preceding noun.⁷ The notion of "tight connection", though intuitively useful, is never further defined and is too vague to be used as a scientific hypothesis, as it cannot be independently proved or refuted. In addition, the hypothesis does not state anything about the relationship between the noun and the verb.

7. "En somme est à l'état d'annexion le nom qui fait étroitement corps avec celui qui le précède" (Basset 1952: 26).

Galand (1964) proposes that the subject role is marked by affixes on the verb. He calls post-verbal nouns that are coreferential with the subject affixes "explanatory complements" (*complément explicatif*), and nouns in the annexed state that complement other nouns "determining complements" (*complément déterminatif*). He does not provide further analyses of these terms in relation to the state opposition.

Some analyses of the two states in Berber invoke, in one way or another, a notion of dependency as the function of the annexed state. Chaker (1988: 689) proposes that the annexed state marks the dependency relation between two "nominals". He includes not only nouns under the term "nominal", but also personal affixes of the verb. This hypothesis fails to take into consideration relationships with prepositions, numerals, and other non-nominal categories.

Bader & Kenstowicz (1987: 281) propose that "a noun is in the bound [i.e., annexed] state when immediately preceded by the head of its phrase; otherwise it is in the free [i.e., absolute] state". They do not define the notion "head". If one were to follow their approach, a verb would be the head of a construction involving its subject, because the subject is in the annexed state, but it would not be the head of a construction involving its object, because the object is in the absolute state. By the same token, prepositions that require complements in the annexed state would be heads, and prepositions that require complements in the absolute state would not. A noun would not be considered the head of the modifying construction with the property concept, because the property concept is in the absolute state. Bader & Kenstowicz's analysis is circular: the head is supposed to assign the annexed state; all annexed states are considered dependent; and the elements that precede them are considered to be heads.

Guerssel (1992) postulates the existence of three "Kase-phrases" in Berber (phrases marked for Case, as understood in generative Case theory). He postulates that case markers are prepositions. Invoking the Invisible Category Principle (Emonds 1987), Guerssel claims that the annexed state is a realization of the "Kase-phrase" where the head (i.e., the preposition marking the Case) is necessarily empty. Guerssel's hypothesis, a conceptual development of Bader & Kenstowicz (1987), reduces the coding conditions to the presence or absence of a preposition. Like Bader & Kenstowicz's hypothesis, Guerssel's approach cannot explain why some prepositions are followed by nouns in the annexed state and others by nouns in the absolute state. We discuss the properties of prepositions later in this study (Section 4.10).

Ennaji (2001) claims that the "construct state" (his term for the annexed state) involves overt noun-raising to the Determiner node due to the strong N-feature of the functional head determiner. The problem with this analysis, which targets Berber in general, is that the annexed state in Berber is used for a great many constructions other than the relationship between two nouns (as listed in Kossmann 2007) and for even more constructions in Kabyle, as shown

in Section 1.3 of the present study. Ennaji's explanation is thus not general enough.

Bader & Kenstowicz's, Guerssel's, and Ennaji's approaches represent a common assumption in traditional linguistics, incorporated also into generative theory, that one constituent of the utterance determines the shape of another constituent. This assumption has been shown to be false for case marking and agreement in Frajzyngier & Shay (2003: 89–113, 153–168). As will be demonstrated subsequently, the annexed state is also an independent coding means, i.e., its presence is not triggered by the categoriality of the preceding or ensuing constituent. Even though some prepositions, e.g., *n*, must be followed by a noun in the annexed state, this is not the effect of the categoriality of the preceding constituent but rather of the compatibility of the annexed state and the function of the preposition, as explained later.

Heath (2005) deals explicitly only with Tamashek. We report on his hypothesis because of its intrinsic interest. Heath proposes that "the central morphosyntactic construction in Tamashek (a Southern Berber variety) can be represented as [X Y' ...] where X is a phrase- or clause-initial element (word or particle), Y' is an immediately following word, and Y is a modification in the form of the corresponding independent form Y" (Heath 2005: 11). In this construction, the "prime" form is derived from the basic form. With respect to nominal morphology, Heath hypothesizes that the annexed state is derived from the absolute form of the noun and is therefore a "prime" form of the corresponding absolute form, which is the basic form. He does not constrain his rule either by the categoriality of the forms involved or by the functions involved. Moreover, he postulates that the construction is one of "local dependency", which means that "no word or fixed-order particle intervenes" (Heath 2005: 11). Our study indicates that, for Kabyle, the constraint on locality has no effect on the states of nouns, and that the subject in the annexed state may be separated from the verb by the object.⁸ Hence, Heath's hypothesis does not explain the facts of Kabyle.

A number of studies have postulated that states are case markers. Aikhenvald (1990, 1995) and König (2006, 2008) interpret the annexed state as a nominative marker and the absolute state as the accusative marker. The use of the terms "nominative" and "accusative" reflects a tacit assumption that the primary function of the two forms is to mark relations between the verb and the predicate. This assumption is not justified for Kabyle, where either the annexed or the absolute form can characterize either the nominal subject or the object (sometimes in the same clause, as illustrated later on) and either form can char-

8. This is also the case for other Berber languages for which the first author has worked on texts, namely Shilha, Tamazight, Rifan, Tashawit, Taggargrent (Ouargla), Tumzabt (Mzab), Tahaggart (Ahaggar Tuareg), among others.

acterize a variety of other grammatical roles, as demonstrated in Section 1.3. Although Galand (1964) and Chaker (1988) observe that the presence of the absolute and annexed states in some contexts allows one to determine the roles of noun phrases, they both state explicitly that it is not the function of the two markers to distinguish between the subject and object (see Footnote 10 in Galand 1964). As we discuss later, inferences about subject and object roles of arguments are a by-product of the system, which is based on an opposition much larger in scope.

Aikhenvald (1995) characterizes Kabyle as a marked nominative language. This characterization is a matter of terminology and of a typological characterization from a single point of view, that of the alignment of the formal marking with the S and O roles (see Comrie 2005). Recall that, as illustrated in Section 1.3, nouns marked by the annexed state and nouns marked by the absolute state can both be interpreted as subjects and objects, and may have a host of other interpretations in a variety of constructions unrelated to grammatical relations with the verb. Hence, the coding of the grammatical relations subject and object is not the function of the two states.

Mettouchi (2008) uses the term "case" in the broad sense of inflectional marking on the noun, adopting Creissels' terminology ("integrative case"). Her paper expands on Chaker's (1988) hypothesis by considering the annexed state as a dependency marker, which acts as a relational modifier to a pronominal or nominal head. But this explanation does not take into account the problem posed by prepositions. She provides a diachronic hypothesis, which postulates the diffusion of the annexed state from a former ablative-locative marker at the level of the phrase to other functions at phrase or clause-level. Our perspective in this study being synchronic, we do not address this claim. Mettouchi (2008) also proposes a typology of information structure values based on the distribution and position of the two forms of the noun in the clause and sentence. The present study focuses on the systemic function of the annexed state, not on the various inferences that can be computed on the basis of state and other coding means such as position or syntactic/prosodic domains.

Prasse (2002), Creissels (2006, 2009a, b), and Kossmann (2007) assert that Berber, with its absolute and annexed states, is an instance of a two-case system: "Most Berber languages distinguish two cases. Although these forms are basically used to convey functional relations, Berberologist tradition calls them STATES" (Kossmann 2007: 431). Kossmann does not specify what the term "functional relations" includes. Creissels (2009b: 75) does explain why he considers the states of Berber to be cases:

In a broad typological perspective, the two so-called states of Berber nouns are cases. It is true that their distribution does not fit into any cross-linguistically common and consequently well-identified configuration, and this is probably the

reason why the specialists of Berber languages are reluctant to recognize them as cases. But if one agrees with the importance of the distinction between head marking and dependent marking, then one must at least recognize that the so-called states of Berber nouns are instances of nominal dependent marking, and are therefore functionally more similar to cases than to the states of Semitic nouns.

Creissels' categorization is based on Nichols' distinction between head marking and dependent marking and on Tamazight data found in Penchoen (1973b). In that characterization, the verb is the head and both subject and object are dependents. Creissels' description would not hold for Kabyle, because some subjects and some objects bear the annexed state and other subjects and objects bear the absolute state. Hence, it is not the dependent status of the constituent that determines the presence of the annexed state.

It therefore appears that both the claim of marked nominative and of dependent marking fail to provide an explanation for why nouns are marked by the absolute state in some constructions and by the annexed state in others.

3. Hypotheses regarding the function of the two states

We propose three hypotheses concerning the functions of the two states.

- (i) Hypothesis 1: The distinction between the annexed state and the absolute state constitutes a coding means.

The implication of this hypothesis is that neither the absolute state nor the annexed state is assigned by the category of another constituent in the utterance. This hypothesis runs against the assumption that the annexed state is assigned by the preceding head, regardless of the nature of the head (Bader & Kenstowicz 1987, Guerssel 1992). The evidence for this hypothesis is provided by the fact that both forms can occur in the same environment, as in the following examples where both forms follow the same verb:

- (16) a. *jə-nyə* *wə-rgaz*
 SBJ.3SG.M-kill.PFV ANN.M-man
 'A man killed.' (Chaker 1988: 688)
- b. *jə-nyə* *a-rgaz*
 SBJ.3SG.M-kill.PFV ABS.SG-man
 'He killed a man.' (Chaker 1988: 688)

- (ii) Hypothesis 2: The absolute state is the default form of the noun and does not carry any specific function.

One piece of evidence for the hypothesis is provided by the fact that the citation form of the noun is in the absolute state:

- (17) *t-a-xxam-t*
 F-ABS.SG-house-F.SG
 'room'

Another piece of evidence that the absolute state is the default form is provided by the fact that the noun in clause-initial position must be in the absolute state and that such a noun may be interpreted as the subject, object, indirect object, adverb, and a number of other functions. Since a noun in the absolute state can be interpreted as having any of these functions, the absolute state form does not code any single one of these functions.

Even though the absolute state is the default form, it can nevertheless have a narrow interpretation in some constructions. This happens not by virtue of the noun having the absolute form only, but by a combination of the absolute form with linear order. Thus, when a noun in the absolute state follows a noun within a noun phrase, it is a modifier of that noun. This is the outcome of the general rule in Kabyle, by which modification is coded by the relative order of constituents, with the second constituent being the modifier:

- (18) *t-a-qjif-t* *t-a-mfjuħ-t*
 F-ABS.SG-child-F.SG F-ABS.SG-small-F.SG
 'a/the small girl'

- (iii) Hypothesis 3: The annexed state provides the value (in the logical sense) for the variable of the function grammaticalized in a preceding constituent.

A grammaticalized function is a function that is represented by a morpheme, which may be affixal (bound pronouns, gender-number makers) or non-affixal (prepositions, relational morphemes). A function is grammaticalized when it is coded by some grammatical marker. The function of a member of a closed set of morphemes is constrained by the functions of the other members of the set. Individual verbs and nouns without inflectional markers belong to an open set. Their meaning is not constrained by the meaning of other members of the set, and they do not represent any grammaticalized function. Prepositions form a closed set of grammatical markers, and each preposition carries a specific function in contrast to other prepositions.

The hypothesis can be represented as follows: $f(x) = N_{\text{ann}}$, where f is the function, (x) is the variable, and N_{ann} is the noun in the annexed state. The variable (x) represents the variable of the grammaticalized function of the coding means; f represents the function itself, e.g., subject, object, number, etc. The annexed state represents the value of the variable of the grammaticalized function $f(x)$ of the preceding constituent. Thus, if the element preceding the noun in the annexed state carries the grammaticalized function subject, $f(\text{subject})$, the noun in the annexed state indicates the (set of) element(s) that instantiate

the subject function. If the preceding element carries the grammaticalized function $f(\text{object})$, the noun in the annexed state indicates the (set of) element(s) that instantiate the object function. If the preceding element carries the grammaticalized function $f(\text{number})$, the noun in the annexed state indicates the (set of) item(s) to which the number applies.

The hypothesis has two components: precedence and value. The evidence for the precedence component of the hypothesis is as follows: the annexed state always follows some other constituent and cannot occur in isolation. Thus the following form is ungrammatical in isolation:

- (19) **t-qif-f-t*
 F-child[ANN]-F.SG
 intended meaning: 'girl'

The evidence for the value component of the hypothesis is developed in the following section.

4. Evidence regarding the function of the two states

4.1. Nature of the evidence

The evidence that the noun in the annexed state provides the value for the variable of the function grammaticalized in the preceding constituent consists of the following: (i) the annexed state can be used only when the noun follows another constituent and there is no sentential boundary preceding the noun in the annexed state; (ii) the annexed state is used only if the preceding constituent contains a formal marker of some grammaticalized function; and (iii) the absolute state either cannot be used in the same environment or, when used, does not provide the value for the variable of the function grammaticalized in the preceding constituent.

4.2. Evidence for the precedence condition

An indication that the noun in the annexed state has to be interpreted with a preceding constituent is provided by the fact that it always follows another constituent. A noun in the annexed state can never occur in clause-initial position and can never occur in isolation. All examples involving the annexed state later in this study provide evidence for this condition.

4.3. Evidence for the proposed function of the annexed state

The annexed state may be used only when the preceding constituent bears a morphological or syntactic trace of the grammaticalized meaning/function: this is evidence that the noun in the annexed state provides the value for the variable of the grammaticalized function encoded on the preceding constituent.

The term "grammaticalized meaning" refers to a meaning that has been encoded in the grammatical system of the language, as opposed to the lexical system. Grammaticalization of meaning implies the existence of some formal means within the language to encode that meaning. With respect to Kabyle, the grammaticalized functions and the forms relevant for the study at hand are: subject affixes and direct object clitics; bound pronouns occurring with a variety of non-verbal predicates; possessive, kinship, and prepositional pronouns; gender and number affixes. Prepositions are functional morphemes as they form a closed set, with the meaning of each preposition defined by contrast with other prepositions. The relational elements such as *bu*, *m*, *wə*, *at*, *sut* (singular masculine and feminine, plural masculine and feminine modified by a noun in the annexed state, see above) form another set of functional morphemes.

4.4. Evidence from the marking of subject and object

Recall that every verb in Kabyle requires a bound subject pronoun. Hence, the verb carries a grammaticalized function marked by person, number, and gender. We propose that this is the grammaticalized function "subject", which we represent as $f(\text{subject})$. A noun in the annexed state provides the value for the subject variable in the grammaticalized function $f(\text{subject})$:

- (20) *ad=ay=idd t-hku tə-myar-t*
 POT=DAT.1PL=PROX SBJ.3SG.F-tell.AOR F-old.person[ANN]-F.SG
t-i-mufufia
 F-ABS.PL-tale.PL
 'The old woman would tell us tales.'

The verb in Kabyle may also carry an object clitic, which also codes the features person, gender, and number. A noun in the annexed state that follows such a verb provides the value for the variable (object) of the grammaticalized function coded on the verb:

- (21) *ad=ay=tnt=idd t-əfk*
 POT=DAT.1PL=OBJ.3PL.F=PROX SBJ.3SG.F-give.AOR
tə-myar-t ad=tnt n-əčč /
 F-old.person[ANN]-F.SG POT=OBJ.3PL.F SBJ.1PL-eat.AOR
jə-hbub-ən=nni
 ANN.PL.M-dried.figs-PL.M=ANAPH
 'Our grandmother would give them to us to eat, those dried figs.'

The two examples of nouns in the annexed state, where one is interpreted as the subject and the other is interpreted as the object, contradict Aikhenvald's (1995) and König's (2006, 2008) claim that the annexed state marks the nominative case and the absolute state marks the accusative case. Since the annexed

state may occur with either the subject or the object, the annexed state does not code any of those functions. The inferences about these functions are computed from some other coding means in the clause.

4.5. Evidence from several non-verbal predications

The presentative predication has the presentative predicator *ha* followed by a bound pronoun, formally identical with an object clitic. This bound pronoun represents the grammaticalized function of the single argument of the presentative predication, $f(\text{presentative argument})$. The noun following the presentative predicate is in the annexed state, and it provides the value for $f(\text{presentative argument})$:

- (22) *ha-tt-a* *t-buf-t* *t-a-iffus-t*
 PRES-3SG.F-PROX F-breast[ANN]-F.SG F-ABS.SG-right-F.SG
 'Here is my right breast.'

The theory proposed here explains the annexed state coding in a straightforward way. The noun is marked by the annexed state because it provides the value for the grammaticalized function represented by the bound pronoun. It is problematic to assign grammatical relations like subject and object in presentative predication in Kabyle. At best one can postulate that it is the sole argument of the presentative predication. Theories that postulate that the annexed state in Kabyle is marked nominative cannot explain the presentative construction because here the alleged nominative marker marks the noun that "agrees" with a bound pronoun that has the same form as the object clitic.

Kabyle has grammaticalized other non-verbal predications involving specific arguments represented by the same pronominal paradigm:

- (i) assessment predication: $f(\text{assessed argument}) = N_{\text{ann}}$, where the noun in the annexed state provides the value for the variable (assessed argument) of the nominal predicative function "assessment predication", cf. (23);
 (ii) predication of absence in a given situation: $f(\text{absent argument}) = N_{\text{ann}}$, where the noun in the annexed state provides the value for the variable (absent argument) of the nominal predicative function "absence in a given situation", cf. (24);
 (iii) superlative assessment: $f(\text{superlatively assessed argument}) = N_{\text{ann}}$, where the noun in the annexed state provides the value for the variable (superlatively assessed argument) of the nominal predicative function "superlative assessment", cf. (25).

- (23) a. *d* *lʕali=tt* *t-qfiʃt-agi*
 COP good=3SG.F F-child[ANN]-PROX
 'This girl is good.'

- b. *d* *iri=t* *wə-rgaz-inna*
 COP bad=3SG.M ANN.M-man-DIST
 'That man is bad.'

- (24) *ulaʃ=it* *wə-qfiʃ*
 EXNEG=3SG.M ANN.M-child
 'The boy is not (t)here.'

- (25) *aʃk=itt* *tə-ksiw-t-agi*
 extraordinary=3SG.F F-dress[ANN]-F.SG-PROX
 'This dress is exquisite.'

4.6. Evidence from coreference between the bound pronoun and possessor

A noun in the annexed state may provide the value for the grammaticalized function $f(\text{possessor})$ coded by the possessive pronominal suffix on the preceding noun:

- (26) *tə-mmut* *t-mʃtu-t-is* /
 SBJ.3SG.F-die.PFV F-woman[ANN]-F.SG-POSS.3SG
wə-myʔar=nni
 ANN.M-old.man=ANAPH
 'His wife died, that man.'

Such a noun is neither the subject nor the object. It does not bear a grammatical relation with the verb. Theories that postulate that the annexed state marks the subject fail to explain the presence of the annexed state on the noun phrase *wə-myʔar=nni* 'the man', because it is not the subject. The clause has another subject, *t-mʃtu-t-is* 'the woman'. The presence of two nouns marked in the same way, viz. by the annexed state, but having different grammatical and semantic relations, is problematic for the claim that the annexed state is a case marker. The presence of the annexed state on the noun phrase 'the man' contradicts the claim that we are dealing here with dependent marking, as proposed by Bader & Kenstowicz (1987), Creissels (2009a, b), and Guerssel (1983), because the noun phrase *t-mʃtu-t-is* 'the woman' is not the head of the construction in the Bloomfieldian (or any other) sense of the term. Our theory explains the annexed state in a straightforward way. The possessive pronominal suffix *-is* represents the grammaticalized possessive function, $f(\text{possessive})$, and the noun in the annexed state provides the value for the variable. Although the noun phrase *wə-myʔar=nni* 'that man', is in the annexed state, it cannot be interpreted as a modifier of the preceding noun *t-mʃtu-t-is* 'his wife' because there would then have to be a genitive preposition between the two nouns.

A noun in the annexed state may also provide the value for the grammaticalized function $f(\text{kinship relation})$ coded by the kinship pronominal suffix on the preceding kinship noun:

- (27) *t-ruħ* *jəmma-tsənt* /
 SBJ.3SG.F-go.PFV mother[ANN]-KIN.3PL.F
tə-qfiʃ-in=nni
 F-child[ANN]-PL.F=ANAPH
 'Their mother left, those girls'

The second noun in the annexed state *tə-qfiʃ-in=nni* 'those girls' is not a modifier of the preceding noun *jəmma-tsənt* 'their mother' because there would then have to be the genitive preposition *n* between the two nouns.

4.7. Evidence from attributive modification

Attributive modification describes properties of the modified element. In Kabyle, the structure has the form noun-modifier, the modifier being in the absolute state. We postulate that the absolute form of the noun is used in this structure because there is no function "attributive property" or "property modification" grammaticalized on a preceding constituent,⁹ hence one cannot have a noun that provides a value for a function that does not exist. Consequently, any attributive modification of the noun cannot involve a modifier in the annexed state. The only other form available is the default form of the noun, the absolute state (28a); the use of the annexed state on the modifier 'little' would result in an ungrammatical utterance (28b).

- (28) a. *t-usa=dd* *t-qfiʃ-t*
 SBJ.3SG.F-arrive.PFV=PROX F-child[ANN]-F.SG
t-a-məʃtuħ-t
 F-ABS.SG-little-F.SG
 'The little girl arrived.'
- b. **t-usa=dd* *t-qfiʃ-t*
 SBJ.3SG.F-arrive.PFV=PROX F-child[ANN]-F.SG
t-məʃtuħ-t
 F-little[ANN]-F.SG
 Intended meaning: 'The little girl arrived.'

The attributive modification provides counterevidence to the hypothesis that the annexed state is the outcome of the noun being dependent rather than the head of the construction. The attributive modifier is the dependent in the Bloomfieldian sense, and also in contemporary usage, and yet it is in the absolute rather than the annexed state.

9. Grammaticalization of attributive properties on the noun is theoretically possible, as attested by some class markers in Bantu languages, but Kabyle has not grammaticalized attributive properties on the noun.

A property-concept noun can serve as the only component of the noun phrase. The annexed form of the property concept provides a value for the grammaticalized function realized on the verb, as in the following example, where the noun in the annexed state provides the value for the *f* (subject):

- (29) *t-usa=dd* *t-məʃtuħ-t*
 SBJ.3SG.F-arrive.PFV=PROX F-little[ANN]-F.SG
 'The little (girl) arrived.'

Property concepts are often expressed through verbs in Kabyle. A special pronominal series is used in the perfective aspect¹⁰ for verbs expressing colors, size, and a number of other properties. The relevant verbs are traditionally called "quality verbs". The noun in the annexed state provides the value for the variable (argument of property verb) of the function *f* (property predication).

- (30) *məʃtuħ-it* *t-qfiʃ-in*
 be.small.PFV-QLT.PL F-child[ANN]-PL.F
 'The girls are small.'

4.8. Evidence from nominal predication

The term "nominal predication" refers to a clause with a nominal predicate. The nominal predicate in Kabyle must be preceded by a copula, resulting in the structure "COP NP". The nominal predicate following the copula is in the absolute state. The subject of the nominal predication is either in the absolute state, when in clause-initial position (31a), or in the annexed state, when following the predicate (31b).

- (31) a. *t-a-qfiʃ-t-nni* *d* *t-a-gugam-t*
 F-ABS.SG-child-F.SG-ANAPH COP F-ABS.SG-mute-F.SG
 'That girl is/was mute.'
- b. *d* *t-a-gugam-t* *t-qfiʃ-t-nni*
 COP F-ABS.SG-mute-F.SG F-child[ANN]-F.SG=ANAPH
 'That girl is/was mute.'

10. In the imperfective and aorist mood-aspects, the regular subject affixes are used. In the perfective, the following series is used:

	Singular	Plural
1st person	V- <i>y</i>	V- <i>it</i>
2nd person	V- <i>d</i>	V- <i>it</i>
3rd person masculine	V	V- <i>it</i>
3rd person feminine	V- <i>t</i>	V- <i>it</i>

value. If the grammaticalized meaning of the preposition is negative, the complement of the preposition is in the absolute state, because the variable cannot be given a value. If the noun following the preposition does not provide the value for the variable of the grammaticalized function of that particular preposition, that noun is also in the absolute state (cf. examples (45) and (46)).

In (33) we list a selection of prepositions and their functions, with an approximate translation into English:

- | | | | |
|------|------------|-----------------------------|----------|
| (33) | <i>g</i> | <i>f</i> (stative locative) | 'at, in' |
| | <i>d</i> | <i>f</i> (associative) | 'with' |
| | <i>n</i> | <i>f</i> (genitive) | 'of' |
| | <i>yr</i> | <i>f</i> (directional) | 'to' |
| | <i>yur</i> | <i>f</i> (human locative) | 'to' |
| | <i>am</i> | <i>f</i> (similar) | 'like' |
| | <i>s</i> | <i>f</i> (instrumental) | 'with' |

The following prepositions are inherently negative:

- | | | | |
|------|-------------|--------------------------|-----------------|
| (34) | <i>siwa</i> | <i>f</i> (~ inclusive) | 'except' |
| | <i>ar</i> | <i>f</i> (~ inclusive) | 'except; until' |
| | <i>bla</i> | <i>f</i> (~ associative) | 'without' |

The evidence for the proposed functions of the two states within the prepositional phrases is provided by analyses of individual prepositions.

In a prepositional phrase whose preposition is not inherently negative, the annexed state is the form that provides the value for the variable of the grammaticalized prepositional meaning.

- | | |
|------|--|
| (35) | <i>g</i> : <i>f</i> (stative locative) |
| | <i>lla-n</i> <i>g</i> <i>wə-xxam</i> |
| | be.PFV-SBJ.3PL.M LOC ANN.M-house |
| | 'They are in the house.' |

- | | |
|------|---------------------------------------|
| (36) | <i>n</i> : <i>f</i> (genitive) |
| | <i>a-qjun</i> <i>n</i> <i>wə-qfiʃ</i> |
| | ABS.SG-dog GEN ANN.M-boy |
| | 'the boy's dog' |

Prepositions with negative meaning, such as *siwa* 'except', *ar* 'except, until', or *bla* 'without', take complements in the absolute state. The variables (~ associative) and (~ inclusive) cannot be given a value:

- | | |
|------|---|
| (37) | <i>siwa</i> : <i>f</i> (~ inclusive) |
| | <i>ruh-nt</i> <i>akw siwa</i> <i>t-a-mʃtu-t-nni</i> |
| | go.PFV-SBJ.3PL.F all except F-ABS.SG-woman-F.SG-ANAPH |
| | 'They all went except that woman.' |

- | | |
|------|---|
| (38) | <i>ar</i> : <i>f</i> (~ inclusive) |
| | <i>wala-ɣ=nt</i> <i>mʃra ar</i> |
| | see.PFV-SBJ.1SG=OBJ.3PL.F all except |
| | <i>t-a-mʃtu-t-inna</i> |
| | F-ABS.SG-woman-F.SG-ANAPH |
| | 'I saw them all except that woman there.' |

- | | |
|------|---------------------------------------|
| (39) | <i>bla</i> : <i>f</i> (~ associative) |
| | <i>i-ruh</i> <i>bla</i> <i>awal</i> |
| | SBJ.3SG.M-go.PFV without word[ABS].SG |
| | 'He left without a word.' |

The behavior of the complements of negative prepositions is consistent with the behavior of the single argument of a negative existential predicate, which does not carry the grammaticalized features person/gender/number and whose complement is also in the absolute state:

- | | |
|------|-------------------------|
| (40) | <i>ulaf</i> <i>aman</i> |
| | EXNEG water[ABS].PL |
| | 'There is no water.' |

However, if the negative existential predicate bears a bound pronoun, the following noun is in the annexed state because it provides the value for the grammaticalized function (argument of negative existential) in the predicate:

- | | |
|------|-------------------------------|
| (41) | <i>ulaf=itn</i> <i>w-aman</i> |
| | EXNEG=3PL.M ANN.M-water.PL |
| | 'The water is not there.' |

Affirmative existentials are predicated with a verb, which requires an obligatory subject affix. Their single argument, if it follows the verb, is in the annexed state, as it provides the value for the grammaticalized function *f*(subject) in the preceding constituent:

- | | |
|------|---------------------------------|
| (42) | <i>lla-n</i> <i>w-aman</i> |
| | be.PFV-SBJ.3PL.M ANN.M-water.PL |
| | 'There is water.' |

The preposition *ar* 'except' can also have a temporal meaning 'until' and its complement is also in the absolute state. The syncretism of the meaning 'except' and 'until' is interestingly also attested in a number of Chadic languages (for Hausa see Bargery 1951: 882). Our explanation is that the noun in the absolute, referring to a time that does not exist yet at the time of speech, does not provide a value for the variable (inclusive) of the function *f*(~ inclusive):

- (43) *ar t-a-mddit-t*
 until F-ABS.SG-afternoon-F.SG
 'See you this afternoon (lit., until afternoon).'

Some prepositions may be followed by a noun in either the absolute or the annexed state. The preposition *s* has an instrumental meaning. The complement in the annexed state provides the value for the grammaticalized function *f* (instrumental) of the preposition:

- (44) *tə-fudd=as* *i-fassən-is* *s*
 SBJ.3SG.F-tie.PFV=DAT.3SG ABS.PL-hand.PL-POSS.3SG PREP
w-aggus
 ANN.M-belt
 'She tied his hands with a belt.'

This preposition can also be followed by a noun in the absolute state. The complement noun does not provide the value for the instrumental function coded in the preposition. Hence the fact that it is not in the annexed state, but in the only other possible form for the noun, the absolute. The absolute state of the noun after this preposition directs the hearer to interpret the complement as a directional adverb of manner, not as an instrumental complement:

- (45) *jə-wwəd=dd* *s a-xxam*
 SBJ.3SG.M-arrive.PFV=PROX to ABS.SG-house
 'He arrived home.'

That *a-xxam* is not a locative complement is shown by its inability to be referred to as noun in subsequent discourse. This sentence cannot be followed by a question about the home, e.g., 'Was the home clean?' etc. Here is another example of the absolute state after preposition *s*:

- (46) *jə-wwi=kəm* *s a-drar*
 3SG.M-bring.PFV=ACC.2SG.F to ABS.SG-mountain
 'He (our father) took you to the mountains.'

The sentence above cannot be followed by a question about the mountain, e.g., 'How was the mountain?' or 'Which mountain was it?'

Compare the same complement in the annexed state, with the locative preposition *yr* 'to':

- (47) *jə-wwəd=dd* *yr wə-drar*
 SBJ.3SG.M-arrive.PFV=PROX to ANN.M-mountain
 'He arrived at the mountain.'

Here the noun in the annexed state provides the value for the variable (directional) of the function grammaticalized in the preposition, and the sentence can be followed by a clause referring to the entity, e.g., 'The mountain was steep'.

The preposition *n* coding the genitive function is followed by the annexed state. This follows from our hypothesis that the annexed state provides the value for the variable of the grammaticalized function of the preposition. In this case $f(\text{genitive modifier}) = wə-myar$.

- (48) *t-a-mttu-t=nni* *n wə-myar*
 F-ABS-woman-F.SG=ANAPH GEN ANN.M-old.person
 'The old man's wife (lit., that woman of the old man).'

4.11. *An explanation of the modification of numerals*

In Kabyle the construction with a numeral has the form Num N, or Num GEN N. The constructions with the genitive preposition follow the explanation we provided earlier for this preposition, namely that the noun in the annexed state is the value for the variable (genitive modifier) of the function "genitive modification" grammaticalized in the preceding constituent. The issue that remains to be explained is why numerals from one to ten, and all higher numerals ending in the numerals one to ten, have the ensuing noun in the annexed state, without an intervening preposition:

- (49) a. *sin j-myar-n*
 two.M ANN.M-old.person-PL.M
 'two old men'
 b. *snat t-myar-in*
 two.F F-old.person[ANN]-PL.F
 'two old women'

One explanation for the use of the annexed state is that numerals belong to a closed set, hence are grammatical markers. The numerals from one to two in contemporary Kabyle carry the feature gender. The annexed state after the numerals provides the value for the variable coded by the numeral, $f(\text{gender})$.

Numerals from 3 to 10 are Arabic loanwords and do not carry gender, yet they are followed by a noun in the annexed state:

- (50) *tlata t-qfiɣ-in*
 three F-child[ANN]-F.PL
 'three girls (lit., "three", narrowed to entities "girls").'

The Berber numeral system is decimal-based. Some languages, such as Kabyle, have borrowed numerals from three upwards, but others, such as Mzab Berber (Tumzabt), have retained the original Berber numerals and display a

gender distinction on all of them. The complex situation in Kabyle could be a retention of an earlier structure in which all numbers up to ten had gender markers and could be followed immediately by a noun in the annexed state, while higher numbers that did not end in a numeral from one to ten, such as twenty, thirty, a hundred etc., were treated like quantifiers and were followed by the genitive preposition *n*.

4.12. Evidence from nominal derivational morphology

There exists a class of grammatical morphemes in Kabyle that have a relational function. Nouns following those markers provide the value for the variable of the function grammaticalized in the markers, namely a relational function that can be interpreted as possession, part-whole relationship, or qualification:

- (51) *mhənd wə-lhusin*
 Mhənd RELAT-Lhusin[ANN]
 'Muhand, son of Lhusin'

Other such morphemes are used for larger specifications, such as ownership in (52a) or profession (52b):

- (52) a. *bu t-hanu-t*
 RELAT.M F-shop[ANN]-F
 'the owner of the shop'
 b. *m t-məllal-in*
 RELAT.F F-egg[ANN]-F.PL
 'an egg-seller (female)'

The form *at* marks the tribe/clan relationship (but can be used for more general relationships):

- (53) *at wə-xxam*
 RELAT.M.PL ANN.M-house
 'the household'

Its feminine counterpart *sut* has the same type of use (54a), but is also used for part-whole relationships (54b):

- (54) a. *sut t-addar-t*
 RELAT.F.PL F-village[ANN]-F
 'the women of the village'
 b. *t-i-qqsubaj sut t-qəlmun-in*
 F.PL-coat.PL RELAT.F.PL F-hood[ANN]-F.PL
 'small-hooded coats' (Dallet 1982: 794)

5. Summary

We have shown that previous studies have failed to explain why the two inflectional forms of nouns in Kabyle are used in some constructions and not in others. More specifically, the study has demonstrated that previous explanations of the functions of the two states, such as the assignment of the annexed state by other constituents (Bader & Kenstowicz 1987, Guerssel 1992) and the marked-nominative and accusative case-marking functions for the annexed and absolute states (Aikhenvald 1995; König 2006, 2008), are incorrect. The study has provided a new explanation for the long-standing open question regarding the function of the two states of nouns. We have proposed and demonstrated that the absolute state represents the default form of the noun and as such has no specific function, and that the annexed state provides the value for the variable of the function grammaticalized in the preceding constituent.

In itself, the noun in the annexed state has only one transparent function, that of providing the variable for a grammaticalized function borne by a preceding constituent. If a noun is preceded by several constituents that may host the function for which the noun in the annexed state is the variable, the following rules for the association apply. If the noun is preceded by a preposition, a numeral, or a relational morpheme, this is the function-bearing item for which the noun provides the value of the variable. Otherwise, the annexed state provides the value for the first compatible function to its left. Compatibility relies on identical gender and number marking. If the first constituent to the left of the noun in the annexed state is a verb with both subject affix and object clitic, and if both bound morphemes have the same value for the features gender and number as the noun in the annexed state, the role of the noun in the annexed state is potentially ambiguous unless there is an intervening prosodic boundary.

The proposed functions of the two states explain the use of the two states in the variety of constructions listed in the introduction of this study, viz. the use of the annexed state in the function of subject, object, complement of various prepositions and bound pronouns, and relational morphemes. The study has also explained why the noun has the absolute state in clause-initial position regardless of whether it is interpreted as the subject, object, indirect object, etc. and why the noun in the absolute state is interpreted as an object in postverbal position and as an attributive modifier when it follows a noun.

The explanation we have provided confirms some of Galand and Chaker's intuitions about the functions of the two states when they were linking the annexed state with affixes on the verb. But ours is the first explanation that links all the contexts of use of the annexed state to a single function and the first that explicitly argues that the absolute state is the default form of the noun and, as such, has no function of its own.

6. Implications for linguistic typology

The present study has described a new type of morphological coding that has not been recognized in descriptions of individual languages, in theoretical literature, or in typology so far. We have demonstrated that the annexed state provides the value for the variable of the function grammaticalized in the preceding constituent. This connection between the form of the noun and a grammaticalized function is a novel type of relationship.

The state opposition in Kabyle is a fundamental coding means that is at play at various levels of the syntactic structure of Kabyle (phrase, clause, sentence). As such, it is comparable to large-scale coding means such as linear ordering or prosody, except that it is limited to nouns. No one-to-one relationship can be drawn between either of the two states and any single narrow function pertaining to grammatical relations or modification.

Therefore, classifying the state system of Kabyle as case would involve considerable stretching of the notion of case as known so far, or its dilution into the notion of morphological inflection on nouns. It would not contribute in any way to the explanation of the function of states or to the explanation of the function of cases. Similarly, treating the Kabyle system as an instance of non-canonical case marking is not accurate, since the use of absolute vs. annexed state does not depend on the usual features involved in non-canonical case systems, namely verb semantics, animacy, intransitivity, agentivity, etc. The use of states is not linked to any construction-specific context in Kabyle.

The system in Kabyle does not indicate any one specific relationship between the predicate and the noun phrases or between noun phrases. The main characteristic of this coding is that the contrast between the two forms of the noun provides a mechanism for computing a large number of relationships within the utterance.

Several questions remain open at this stage and are the subject of on-going research by the two authors, namely: How exactly are the narrow functions pertaining to the domain of grammatical relations computed from the state opposition in Kabyle? Is the function of the annexed state the same in Berber languages other than Kabyle? What is the historical origin of the state opposition and how has it grammaticalized throughout Berber? What are the consequences of the loss of the state opposition in some Berber languages (Siwi, Zenaga, Ghadamsi, etc.)?

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Abbreviations: 1/2/3 1st/2nd/3rd person; ABS absolute state; ACC accusative bound pronominal paradigm; ANN annexed state; ANAPH anaphoric suffix; AOR aorist; COP copula; DAT dative bound pronominal paradigm; DEM demonstrative; DIST distal; EXNEG existential negation; F feminine; GEN genitive preposition; IPFV imperfective; KIN kinship bound pronominal paradigm; M masculine; OBJ object bound pronominal paradigm; PFV perfective; PL plural; POT potential particle; PREP prepositional pronominal affix; PRES presentative particle; PROX proximal; QLT quality verb; REL relative marker; RELAT relational morpheme; RELSBJ subject relativization marker; SBJ subject bound pronominal paradigm; SG singular; VOC vocative.

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