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State Alternation in Amazigh

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Abstract

The paper addresses the question of state alternation in Amazigh. It provides a detailed description of the morphological and phonological changes that target CS nouns. Then, it discusses the environmental conditions under which CS and FS occur. The paper argues that these changes go beyond the morphological and phonological system of the language. Later, it outlines the main previous studies about the phenomenon and presents an alternative complementary approach. The paper argues that the initial vowel is not a determiner since [+ definite] in Amazigh is not an inherent feature of DP and it is contextual. Moreover, a further argument against DP analysis is that in some languages demonstratives, quantifiers, possessives do not occur with (in) definite articles unlike Amazigh. I postulate that CS is a language specific phenomenon that is not only the result of phonological operations, but also of certain syntactic operations. I argue that d, bu 'the one with.MS', and mu 'the one with. Fem' are not preposition, that CS marks its complement. I postulate that buNouns contain an inflectional morphology inside them, which make bu a derivational affix. A phrasal affix which attaches to words that are already inflected. The affixation of bu CS marks its selected noun. I hypothesize that Amazigh does not allow the consonant cluster /tw/. In this line of analysis, the initial vowel does not change when it is part of the stem. Hence, Amazigh has not only consonantal roots but vocalic ones as well. I argue that a noun cannot be marked for CS in isolation. It is marked by the functional head that c-commands the NP. The head is not only T or P, but it can be also a coordinator, a numeral or a phrasal affix. The significance of the study lies in the fact that it relates phonology to syntax in dealing with state alternation in Amazigh, unlike most of the previous studies.

1. INTRODUCTION

The paper deals with Amazigh which is a language spoken in North Africa. It belongs to the Afro-Asiatic (Hamito-Semitic) language family that includes various varieties of Berber language. Variety spoken in the southeast of Morocco. The language covers also a vast geographical area and spoken all over the world; its speakers are in Europe, United States, and Canada. The variety dealt with in this paper is the Amazigh variety spoken in the southeast of Morocco; referred to as Tamazight. The noun in Amazigh can be in Free State or Construct State (annexed state). This alternation of state has been subject to many works and studies (Guerssel, 1987 and 1992; El Moujahid, 1997; Achab, 2000; Ennaji 2001; Mettouchi and

Frajzyngier 2012; Lahrouchi, 2013; El hankari, 2014; Belkadi, 2017; and many others). The shared characteristic between these studies is that state alternation is related to definiteness and case. Thus, nouns are subject to phonological and morphological changes which target the initial vowel in both masculine and feminine forms, and which make the syntactic difference between CS and FS. The paper provides a detailed description of the environmental conditions under which CS and FS occur. It discusses the distributional constrictions of state alternation which go beyond the morphological and phonological system of the language, outlines the main previous studies about the phenomenon, and presents a complementary alternative approach that takes a reconciliation path between Lahrouchi's templatic analysis and El hankari's syntactic model to account for state alternation in Amazigh.

The paper is organized as follows. The first section presents and describes the main change on the word form and the common environmental conditions under which CS and FS occur in Amazigh. The second section overviews the main analyses and studies that have dealt with state alternation. The third section presents a new proposal to handle state alternation in the language under study.

1.2.FREE STATE:

Free State nominal appear as preverbal subjects, objects of a verb, and complements of some heavy prepositions1 like bla (without) and ar (as far as).

(1)

a. ičča u-rba a-ɣrum
eat: 3MS SG CS-boy.NOM FS-bread.ACC
"The boy ate bread"

b. idda s tə-gmmi bla a-rba (not * bla u-rba)
go: 3MS.SG to CS-house without boy-FS
" He went home without the boy"

c. idda w-rgaz ar amardul (not * ar umardul)
go: 3MS.SG man-CS as far as desert-FS
" The man went up to the desert"

Not all NP complements of heavy prepositions are in Free State as demonstrated in (2).

(2) igan ɣur u-rba (not * ɣur arba)
sleep: 3MS SG at CS-boy
"He slept with the boy"

2. CONSTRUCT STATE

[1] According to Lahrouchi (2013: 59), 'the dichotomy of light and heavy refers to phonological weight'. According, 'prepositions containing more than one segment are seen as heavy'. Some scholars (see Guerssel 1987 and Achab 2000) use the terminology of true prepositions versus non-genuine prepositions.

When a feminine noun is marked for the construct state, its initial vowel placed after an initial [t] disappears if it is 'a' or 'i'. However, we maintain the vowel if it is 'u'.

A masculine noun is marked for the construct state by taking a semi-vowel, as exemplified below:

(3)

a. ″w_″: if the initial vowel is ″a″ or ″u″, we get ″wa-″ or ″wu-″.

b. ″y-″: if the initial vowel is ″a-″ or ″i-″, we get ″yi-″.

Alternatively, the initial vowel ″a-″ or ″i-″ is transferred in the following ways:

c. ″a-″ becomes ″w[ə]-″ or ″u-″.

d. ″i-″ becomes ″y[ə]-″.

2.1 Masculine

Nouns with initial vowel ″a-″

″a-″ becomes ″wa-″:

- ***With collective nouns or nouns with two syllables:***

(4)

Free state	construct state	
a-čal	wa-čal	'land'
a-man	wa-man	'water'
a-lim	wa-lim	'straw'
a-mur	wa-mur	'portion'

Exception:

(5)

a-rba	u-rba	'boy'
a-qmu	u-qmu	'face'
a-fus	u-fus	'hand'
a-ḍar	u-ḍar	'foot'
a-yrnni	u-yrnni	'front'

″a-″ becomes ″wə-″:

- ***With singular nouns composed of two syllables, in most cases, and whose plural is formed with the initial vowel ″i-″:***

(6)

Free state	construct state	
a-zref	**wə-**zref	'right'
a-zrem	**wə-**zrem	'worm'

″a-″ becomes ″u-″:

- ***A noun with three syllables or more, wherein the first syllable is open:***

(7)

Free state	construct state	
a-ri-fi	**u-**rifi	'rifian'
a-ro-miy	**u-**romiy	'a European man'

Nouns with initial vowel ″i-″

″i-″ remains ″i-″: no annexation:

- ***When the noun has three syllables, wherein the first is open:***

(8)

Free state	construct state	
i-gen-wan	**i-**genwan	'skies'
i-fel-wan	**i-**felwan	'boards'

″i-″ becomes ″yi-″:

- ***With monosyllabic nouns***

(9)

Free state	construct state	
i-sk	**yi-**sk	'horn'
i-ḍ	**yi-**ḍ	'night'

- ***When the noun has two syllables, wherein the first is open:***

(10)

Free state	construct state	
i-zem	**yi-**zem	'lion'
i-fis	**yi-**fis	'hyena'

- ***When the first consonant of the noun is doubled in the second syllable:***

(11)

Free state	construct state	
if-fer	**yi-**fer	'leaf'
im-mer	**yi-**mmer	'effort'

″i-″ becomes ″yə-″:

- ***With nouns that have closed syllables, wherein the initial vowel is followed by two consonants, or one consonant is doubled.***

(12)

Free state	construct state

it-ri	**yə-**tri	‘star’
im-dduk-kal	**yə-**mddukkal	‘friends’

Nouns with initial vowel ″u-″

″u-″ becomes ″wu-″:

(13)

Free state	construct state	
u-ṣčay	**wu-**ṣčay	‘wolf’
u-ččen	**wu-**ččen	‘jackal’

2.2 Feminine

A feminine noun in the construct state loses its first vowel. Amazigh language exhibits different types of nouns.

Nouns with an initial ″ta-″

″ta-″ remains ″ta-″: no annexation:

- ***With the majority of nouns with double consonant***

(14)

Free state	construct state	
ta-ddart	**ta-**ddart	‘house’
ta-ssa	**ta-**ssa	‘liver’

- ***With nouns made of two syllables, wherein the first syllable is open***

(15)

Free state	construct state	
ta-ma	**ta-**ma	‘edge’
ta-ɣat	**ta-**ɣat	‘sheep’

- ***With nouns whose first syllable is closed and ends with a final vowel ″a″***

(16)

Free state	construct state	
taw-la	**ta-**wla	‘fever’
tar-wa	**ta-**rwa	‘offspring’
tam-la	**ta-**mla	‘bless’

″ta-″ becomes ″tə-″:

- ***With nouns composed of two syllables, wherein the first syllable is close and the second contains at least three segments:***

(17)

Free state	construct state	
taw-temt	**tə-**wtemt	'woman'
taf-tilt	**tə-**ftilt	'wick of a lamp'

″ta-″ becomes ″t-″:

- ***Nouns composed of three syllables, wherein the first syllable is open:***

(18)

Free state	construct state	
ta-wen-za	**t**wenza	'luck'

Nouns with initial ″ti-″

″ti-″ remains ″ti-″: no annexation

- ***With nouns composed of two syllables, wherein the first is a closed syllable and the third segment (consonant) is doubled:***

(19)

Free state	construct state	
tis-sit	**ti-**ssit	'drink'
til-las	**ti-**llas	'dark'

- ***With nouns composed of two syllables, wherein the first syllable is open***

(20)

Free state	construct state	
ti-remt	**ti-**remt	'portion'
ti-zi	**ti-**zi	'mountain pass'

″ti-″ becomes ″tə-″:

- ***With nouns composed of two syllables or more and the first is a closed syllable***

(21)

Free state	construct state
tig-mmi	**tə-**gmmi (house)
tif-rit	**tə-**frit (small cave)

″ti-″ becomes ″t-″:

- ***With nouns composed of three syllables or more and the first is an open syllable***

(22)

Free state	construct state	
ti-wi-zi	**t-**wizi	'voluntary work'
ti-su-ra	**t-**sura	'keys'

Nouns with initial ″tu-″

″tu-″ remains ″tu-″: no annexation

(23)

Free state	construct state	
tu-ɣmas	**tu-**ɣmas	‘teeth’
tu-na	**tu-**na	‘wells’
tu-ssna	**tu-**ssna	‘knowledge’
tu-ga	**tu-**ga	‘grass’

2.3 Construct State NPs

NPs are in construct state when they appear as subjects postponed to verbs:

(24)

a. iswa **w**-rgaz a-man
drink: preterit 3MS SG CS-man.NOM water.FS-ACC
″The man drank water″

b. a-rgaz iswa aman
man.FS-NOM drink: 3MS SG water.FS-ACC
″The man drank water″

c. iswa aman
drink: preterit 3MS SG water.FS-ACC
″ He drank water″

NPs are in construct state when they appear as complements of some prepositions:

(25)

a. adlis n **t-**rbat
book-FS of girl-CS
″The girl’s book″

b. iṭṭas tifiɣra s **u-**fus
touch: 3MS SG snake with CS-hand
″He touched the snake with his hand″

c. ayyur d **ye-**tran
moon-FS and CS-star.PL
″the moon and the stars″

d. iwt Yanis g **u-**qmu
hit: 3MS SG Yanis on CS-face
″He hit Yanis on the face″

NPs are in construct state when they appear after numerals:

(26)

a. sin **wa-**rraw
two.MS CS-boy.PL
″Two boys″

b. snat t-rbat-in
two.FM CS-girl.PL
″Two girls″

NPs are in construct state when they appear after the morpheme [id]:

(27) id xali

PL. Morpheme CS.uncle.SG

″My uncles″

The data above show that construct state in Amazigh language is subject to some distributional restrictions. These distributional restrictions of CS reveal some interesting facts about the morphological system of the Amazigh language. The issue of Construct State in Amazigh language goes beyond the morphological system of the language.

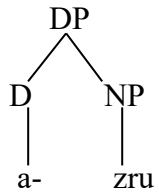
3 A BRIEF OUTLINE OF THE MAJOR APPROACHES AND CLAIMS

a. Achab 2000

Achab assumes that FS nouns are DPs that are headed by the initial vowel a-[2] which is considered a determiner. The determiner attaches to the feminine marker t- or the masculine w- and gets inflected for gender. This results in ta- for feminine nouns and wa- for masculine nouns. This yield the structures in (28) for the masculine noun ‘a-zru’ stone and its feminine ‘ta-zrut’, taking into account the fact that w- disappears in FS.

(28)

a.



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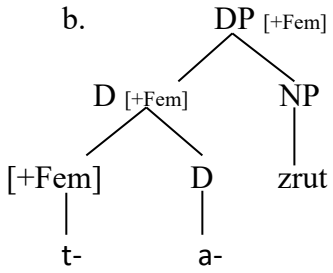
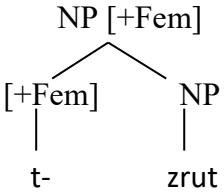


(Achab, 2000)

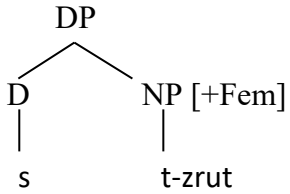
The NP is presented by the stem which is syntactically unmarked, and cannot head a maximal projection of its own. In Achab’s analysis, the syntactic category feature [+D] and the gender feature [+feminine] percolate to the maximal projection DP.

Concerning CS nominals, Achab assumes that they are derived through a two-step process. First, the gender morpheme is associated with the word stem, then the inflected stem is selected by a determiner, as demonstrated in (29).

(29) a.



b.



If we compare the FS structure and the CS structure, the determiner presented by the element s[3] ‘with ‘in (29b) is outside the gender morpheme t-, while the one represented by the initial vowel in (28b) is inside the morpheme t-. In this regards, Achab argues that the two structures are derived differently. Accordingly, the morpheme gender in FS derivation is associated with the determiner. In CS derivation, it is associated with the stem. Therefore, in

[2] The initial vowel a-, the feminine gender marker t-, the morpheme w- are separated with a dash for the sake of clarity.

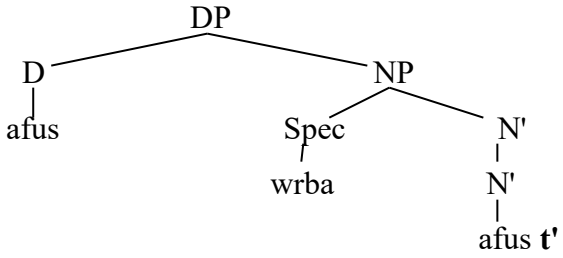
[3] According to Achab (2000) the object DP that lacks the initial vowel is not a ‘full DP’. It is a bare NP which is associated with the head D. This head is represented by the preposition *s* ‘with’.

Berber words are inflected for gender regardless of the state. In his analysis, contrary to traditional analyses, Achab made the following assumptions (Achab 2000:08):

- CS state nominals are derived from their FS nominals by deleting the initial vowel and prefixing the masculine morpheme w-.
- CS forms, for both feminine and masculine, are derived by prefixing the morphemes t- and w- to word stems.

Many scholars associate state alternation with definiteness. However, in Amazigh [+definite] is not is an inherent feature of DP and it is contextual. There is no overt definite article. Hence, D as a functional head is not phonetically realized. This puts Achab's analysis of the initial vowel as a determiner under scrutiny. He claims that FS nouns are DPs whose head D is presented by the prefixal initial vowel. This contrasts with Guerssel's (1987) default case marker and our analysis of the initial vowel as nominal classifier (see Boussayer 2021). If we assume that the initial vowel is a determiner following Achab (2000), and because stems/roots are syntactically unmarked, they cannot head a maximal projection. Therefore, we cannot account for the head noun movement to D position in the following CS DP structure:

(30)



This analysis fails to account for the syntactic and phonological conditions under which state alternation takes place and ignores the interaction between syntax and phonology.

Moreover, another argument against DP analysis is that in some languages, like English and French, demonstratives, quantifiers, possessives do not occur with (in) definite articles as demonstrated in the following examples:

In English:

(31)

a. *this the man/ *this a man.
b. *one the man/ *one a man.
c. *my the book/ *my a book.

In French:

(32)

a. *ce le garcon/ *this the boy.
b. *plusieurs les garcons/ *many the boys.
c. *Mon le livre/ *my the book

However, this fact is not relevant to Amazigh4. In this language, definiteness is contextual and not within the morphological shape of the noun.

(33)

a. argaz-dɣ
   FS-man-this
   'This man'

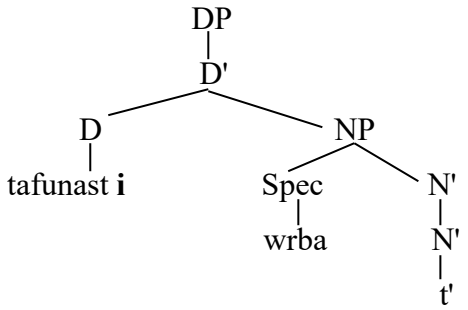
b. arba-inu
   FS.boy-my
   'My boy'

c. yan w-rba
   one CS-boy
   'One boy/ a boy'

b. Ennaji 2001

Ennaji 2001 argues that the genitive constructions CS of the type: [DP N (prep) NP] is derived by means of N-raising to D. Accordingly; he argues that CSs are DPs headed by D. This D contains an AGR that maybe overt or covert. He claims that N-raising is due to the strong N-feature of the functional head D in Berber. Ennaji postulates that the head N assigns Gen case to the argument it governs and can never have a definite determiner. His proposal is sketched below in (34):

(34)



The head N raises5 from within the lexical projection NP to D. The motivational reason behind this movement is to discharge Gencase onto the argument on its right edge. The genitive6 complement remains in-situ which results in a CS. He justifies the non-movement of the genitive NP by the process of nominalization. This process necessitates the NSO order, like in verbal clauses. This claim is debatable for the mere reason that it is the preposition that c-command the CS NP.

This analysis fails to account for the compulsory occurrence of the genitive NP marker when the noun is feminine or includes a vowel-initial stem as in (35).

(35)

[4] Lahrouchi (2013) highlighted that the same applies for Hebrew where the definite article ha- occurs with demonstratives, quantifiers, and possessives.

[5] Ennaji assumes that N to D raising is required by the 'Directionality Principle' because D contains abstract AGR which validate case assignment to DP. N-movement to the left edge is for feature checking.

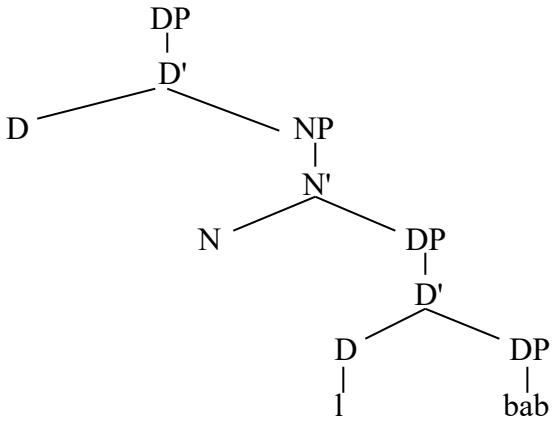
[6] Ennaji 2001 noted that the genitive preposition is perhaps omitted at PF for phonological reasons.

a. afus n t-rba-t
hand of Fem.SG.CS-child-Fem.SG
'The girl's hand'

b. imi n u-lɣum
mouth of CS-camel
'The camel's mouth'

Ennaji fails to account for this interaction between phonology and syntax. His study focuses on the syntactic relations, but does not explain why the noun is marked for CS. Moreover, he postulates that the prefix l- borrowed from Arabic occupies a D position and is used as a definite marker. He argues that the article maintains its morphosyntactic property as in (36):

(36)

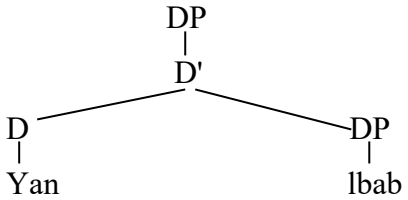


The claim is subject to question for the simple reason that the article l- 'the' borrowed from Arabic does not maintain its [+ definite] property. It becomes part of the root. The argument against this claim is that in Amazigh we can use the numeral yan 'one.MS', which function as an indefinite article, before borrowed Arabic nouns starting with the article l- 'the' as in (37).

(37)

a. yan l-bab
a the-door
'A door'

b.



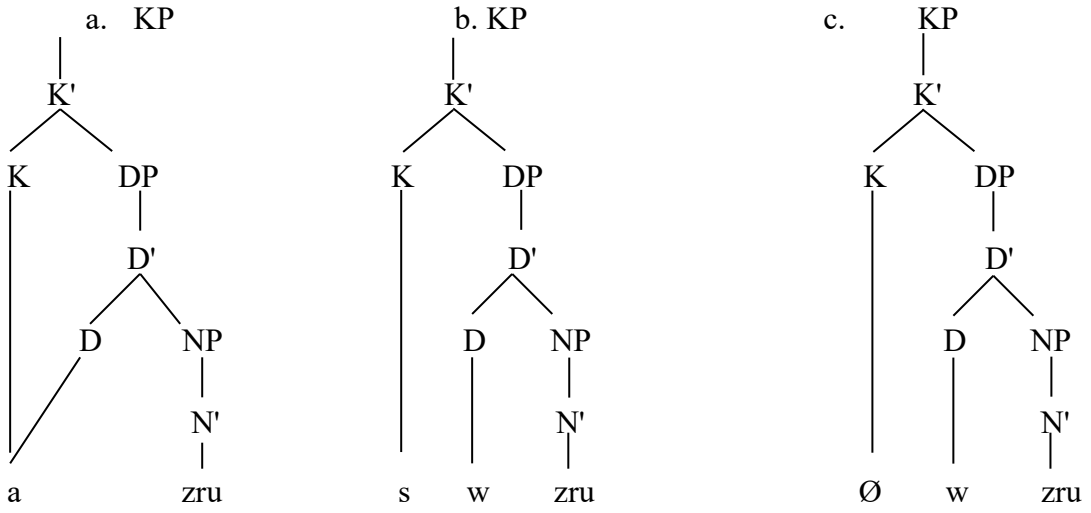
Ennaji's analysis fails to account for other cases under which CS is marked because it limits CS marking to the relation between two nouns. It only claims that CS is the outcome of overt N-raising to D because of the strong N-feature of the functional head determiner. This fact pushes us to address state alternation on the basis of a different approach.

c. Guerssel 1987 and 1992

Guerssel in his analysis of FS and CS in Berber language, mainly the variety of Taqbaylit argues that what is considered a CS form is either a determiner phrase or a kase phrase, and

that the head N is not realized. He considers the initial vowel a- in FS a 'portmanteau' morpheme that is dominated by the functional heads D and K; the morpheme a- merges these two heads, as in (38a). In CS form, he considers the initial w- a determiner and that the light preposition s fills the K head as a case marker, as in (38b). In (38c) w- attaches to the functional head D, while the K head is null. The empty k position is due to the absence of the light preposition.

(38)



(Guerssel 1992)

Guerssel argues that FS forms are Kase Phrases (KPs) that include a case marker, while CS is a DP that contains a determiner and a noun. He claims that case markers are prepositions. In his view, CS is the outcome of the 'Kase phrase' headed by an empty preposition. This account fails to explain why some prepositions mark their NP complement for CS and some do not.

El hankari (2014) argues that prepositions that are referred to in literature as 'genuine' (Guerssel 1992) or heavy prepositions, because they consist of more than one segment (Lahrouchi 2013) are borrowed from Arabic. According to El hankari, they are not prepositions because they appear as verbal clause modifiers and they are only used within a clause with a future tense as in (39).

(39)

a. bla að ð-du-ð
NEG FUT 2SG.come-SG
'You don't need to come'

b. qbəl að ð-du-ð
before FUT 2SG-come-2SG
'Before you come'

c. *qbəl ð-di-ð
before 2SG-go.PERF-2SG
'Before you went' (El hankari 2014)

The borrowed elements from Arabic cannot be adverbials because their position is fixed while adverbials elements that contain prepositions phrases can appear clause-initially, clause-finally, or after the verb. This is consistent with most Amazigh varieties: Tarifit Berber (El hankari, 2014:32); Taqbaylit Berber (Bendjaballah and Haiden: 2013), and Tamazight the object of this study. Following El hankari, the fixed position of the elements in (39a) and (39b)

and their control of the clause tense is a solid argument that they are neither adverbs nor prepositions.

d. Mettouchi and Frjzyngier 2012

Mettouchi and Frjzyngier (2012) claim that state in Taqbaylit Berber provides the specific value for a grammaticalized function that is encoded earlier in the sentence. They argue that a coding system on NPs exists and it is not related to 'grammatical functions, semantic or information structure'. Along this line of analysis, they propose that the FS is the default form of the noun and has no function, while the CS has a specific grammaticalized function. Accordingly, this function is encoded in the grammatical system through inflectional or syntactic means. In their study, Mettouchi and Frjzyngier postulate that most studies on state are morphologically oriented and that the question of the function of the opposition between FS and CS is dismissed.

The study considers CS as a dependency marker acting as 'relational modifier to a pronominal and a nominal head' Mettouchi and Frjzyngier (2012). This assumption neglects the problem of prepositions. Moreover, the main claim is that CS constitutes a coding means. In their hypothesis, they argue that CS is not assigned by "the category of another constituent in the utterance". To justify this claim, they posit that both CS and FS can occur in the environment after the same verb as in (40).

(40)

a. jə-nɣa wə-rgaz
SBG.3SG.MS-kill.PFV CS-man
'A man killed'

b. jə-nɣa a-rgaz
SBG.3SG.MS-kill.PFV FS-man
'He killed a man'

Mettouchi and Frjzyngier (2012)

Along with this analysis, they argue that FS is the default form of the noun and does not carry any specific function. The order of the constituents makes the second NP as a modifier. Besides, the grammaticalized function of the preceding constituent is represented by the affixal morpheme or non-affixal (prepositions) which CS marks the second NP and connects the form of the noun with the grammaticalized function.

If we assume this analysis, NPs should maintain their marking in situ position or when moved. This is not the case with the topicalized subject in SVO Amazigh (Tamazight) as demonstrated in (41).

(41)

a. i-tʃa w-rba
3MS.SG-eat.Perf CS-boy
'The boy ate'

b. arba i-tʃa
FS.boy 3MS.SG-eat.Perf
'The boy ate'

We notice that the semantic interpretation of the sentence has no impact on the CS marking. This make the hypothesis addressing state opposition and dependency connection

between the relational modifier and the nominal head unable to account for the syntactic environments under which NPs are marked for CS on the one hand, and inadequate to justify the phonological changes on the noun form on the second hand.

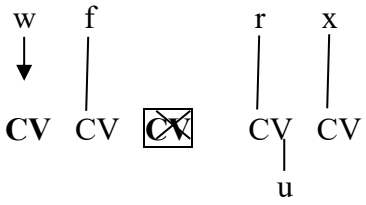
e. Lahrouchi 2013

An alternative to the analyses presented above is provided in Lahrouchi (2013). The author combines morphosyntactic and templatic analyses to argue for a 'prosodic-deficiency' in CS (see Lowenstamm 1999). According to him, "one crucial tenet of templatic theory is the existence of empty templatic sites which host specific morphological material". In this regards, he adopted the theory to capture CS in Tashlhiyt Berber[7].

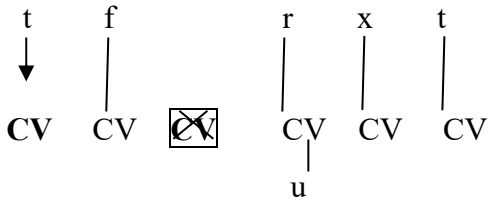
In his analysis, Lahrouchi argues that the gender morpheme t- and CS w-compete for the same position; they never co-occur together. For example, FS afrux alternates with CS ufrux 'boy', but FS tafruxt alternates with CS tfruxt 'girl' and not with *tufruxt. Therefore, Lahrouchi posited that t- and CS w- compete for the consonantal position in the initial CV site. The structure in (42) recaptures his own proposal.

(42)

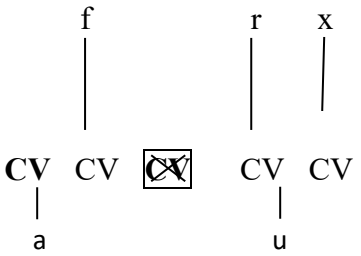
a. MS CS: wfrux > [ufrux]



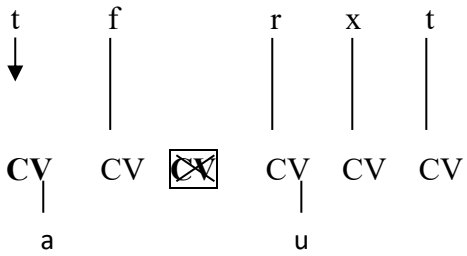
b. FS CS: tfruxt



c. MS FS: afrux



d. FS : tafruxt



(Lahrouchi, 2013: 63)

We notice in the forms above that only one empty C slot which is available in the initial position of the template (the CV in bold). Lahrouchi argues that the gender t- connects to the empty C slot before the addition of the CS w-. Therefore, gender precedes CS and results in a feminine form in which CS w- is absent. The CS w- appears in the masculine form because gender is unmarked.

Concerning the co-occurrence of the plural marker i- occurs with the feminine marker t- in the FS tifrxin 'girls', its absence in the CS tfrxin 'girls', and the identical form of the FS and CS of the masculine noun ifrxan 'boys', Lahrouchi (2013) assumes that gender and number

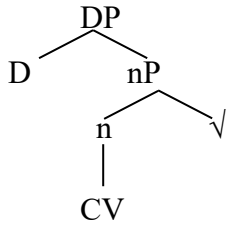
[7] A variety of Amazigh language spoken in southern Morocco.

compete for the same position in the template. He argues that gender takes precedence over number in the CS tfrxin 'girls', while in ifrxan " the masculine has no overt realization". In this respect, he assumes that "like the CS marker w-, the plural marker j- connects to a C position and surfaces as a high vowel [i] when adjacent to consonants".

Lahrouchi implemented his templatic analysis to the DP's syntactic structure. The forms in (43) restate his own analysis for both FS DPs and CS DPs.

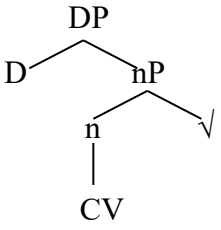
(43)

a. FM FS: tafruxt



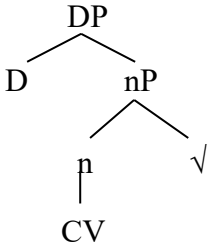
t a frux

b. MS FS : afrux



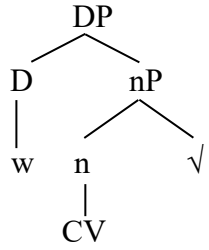
a frux

c.



t frux

d.



Ø frux

(Lahrouchi, 2013: 64-65)

In (43 a-b) the vowel a- is a nominal marker generated together with the gender marker t- under n, while w- in (43d) is a determiner, and the CV unit under n is empty because masculine gender has no overt realization in Berber (see Lowenstamm 2008 and Lahrouchi 2013 on the issue of the locus of gender for more details).

In sum, Lahrouchi argued that CS w- and the feminine gender morpheme t- compete for the same templatic position. He proposes that a CV template hosts the gender morpheme t- under nP. Therefore, when this morpheme is raised to D no C position is left to host w-. This results in the feminine morpheme t- realization.

Lahrouchi (2013) claims that the construct marker 'w-'is never used with the feminine marker 't-'. If we assume that [w]and [u] are positional variants of the CS morpheme, this holds true for the Construct State marker u-, which should never occur with the feminine marker t-. However, Amazigh variety of Ait Atta shows evidences of the co-occurrence of the CS marker u- with the feminine marker t-, as I have shown in the example (23) repeated in (44) below.

(44)

Free state	construct state	
tu-ɣmas	**tu-**ɣmas	'teeth'

tu-na	**tu-**na	'wells'
tu-ssna	**tu-**ssna	'knowledge'
tu-ga	**tu-**ga	'grass'

Lahrouchi's analysis fails to account for the specific syntactic environments in which NPs are marked for CS. Construct State is a language specific phenomenon that is not only the result of phonological operations, but also of certain syntactic operations. Hence, a well-constructed analysis would be one that relates phonological components of the word to syntactic operations.

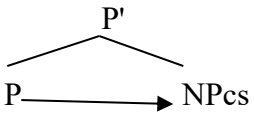
f. El hankari 2014

In his analysis of construct state in Tarifit8 Berber, El hankari argues that CS is a language specific property, which has nothing to do with phonological operations, but arises from a syntactic relation between an NP and a higher c-commanding head. Accordingly, he assumes that CS can be articulated and accounted for in distributed morphology "whereby the phonological components interpret the syntactic output" (El hankari, 2014:28). Among his arguments, CS is syntactic because it is not sensitive to the presence of adjuncts and that it is always associated with the functional category of the noun and cannot be marked on the lexical root9.

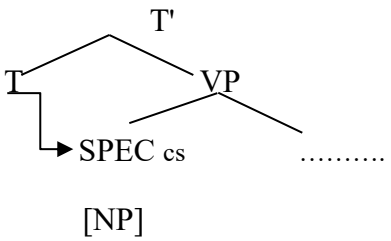
In his alternative analysis, CS arises from a particular syntactic relation between an NP and a functional head, which is either T or P. Hence, the NP is marked for CS by T when it is a post verbal subject and marked by P when it is a complement of a PP projection. The NP functional head relation yields the CS marking on the NP, as demonstrated in (45a-b).

(45)

a. [p' P[NP]]:



b. [T' T[VP SPEC-NP]] :



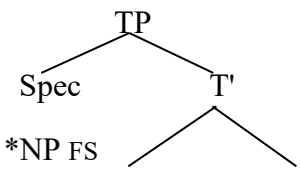
El hankari (2014:36)

The c-commanding relation in the structures (34a-b) results in NP making for CS.

In the pre-verbal position (SVO), the NP is marked for FS because it loses it's marking for CS once it moves to Spec, TP as demonstrated in (46).

(46)

[TP SPEC-TP [T' T]] :



[8] It is a variety spoken in the Rif area in Northern Morocco.

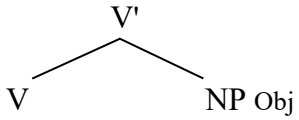
[9] The lexical root refers to a categoryless item. The combination of the root and the functional category results in a word/noun.

T ……

El hankari (2014:36)

Under the assumption that only T is a case marker in a verbal clause, the object NP is in the FS since the c-commanding head is V, as exemplified in (47).

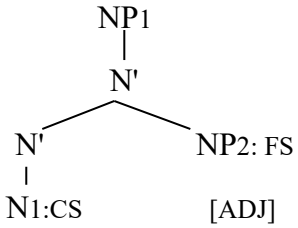
(47)



El hankari (2014:37)

Additionally, in El hankari's analysis since nominal modifiers morphology, mainly adjectives, is identical to the morphology of the nounsthey modify, they cannot be marked for CS. Thus, NP1 gets marked for CS while its modifier (NP2) remains in FS.

(48) [NP1[N' N1[N' N2 [ADJ]]]]

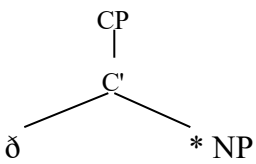


El hankari (2014:37)

As regards to the relation between CS and the status of adjuncts, El hankari postulates that CS is a syntactic issue for two main reasons. First, even adjectives display 'identical morphology' to their modified nouns; they are not marked for CS. Second, CS is not related to the form of the elements but to their syntactic information. Moreover, the possible insertion of adjuncts10 (adverbs and PPs) in the clause-initial, clause-final or after the verb excludes the idea of CS as the result of 'linear adjacency'.

El hankari (2014) analyzes the nominal coordinator morpheme d- 'and' that combines NPs and marks the second NP it selects for case as a preposition. The argument he puts forward is that if d- 'and' is a coordinating conjunction that occupies a c position as in (49), this contradicts with his claim that c cannot be a CS marker.

(49)



[10] "CS as a syntactic relation appears to be blind to the presence of adjuncts in the clause" El hankari (2014:40).

u-rgaz

To explain this, EL hankari provides the following arguments:

- The morpheme d ‘and’ is used only to join NPs not VPs.
- Other conjuncts like like; nɣd ‘or’, maʃa ‘but’ can select a NP or VP, but they do not mark their selected NP for CS.

However, a counter argument comes from Amazigh where the morpheme d ‘and’ is used to join NPs and VPs as demonstrated in (50).

(50)

a. i-tran d w-ayyur
PL-star and CS-moon
‘The stars and the moon’

b. i-swa aman d itʃa aɣrum
3SG.Masc-drink.PERF water and 3SG.Masc-eat.PERF bread
‘He drank water and ate bread’

The data above in (50b) questions El hankari’s claim that the coordinator morpheme d- ‘and’ is a preposition not a conjunct.

Other CS markers found in both Tarifit and Tamazight are mu ‘the one with. Fem’ and bu ‘the one with. Masc’, which encode a genitive meaning.

(51)

a. bu-u-rzzuy
the one with. Masc-CS-turban
‘The one/the man with a turban’

b. m u-qllal
the one with.Fem-
‘The one/woman with …..’

El hankari (2014) made the following generalization:

(52)

“X CS-marks its NP under closest c-command iff X is a head, where the head is T or P”.

The problem with this generation is that the construct markers in (51a) and (51b) encode a genitive meaning like the preposition n ‘of’. Therefore if we assume, following El hankari 2014, that “all prepositions that are formed by a single consonant occupy the onset of the first syllable of their complement NP”, the deletion of the preposition, as in the case of n ‘of’, makes the syllable onsetless and explain the insertion of the glide /w/. This is not the case with the CS marker m ‘the one with’. Even if the following noun starts with a vowel, m cannot be deleted. More crucial is that the use of CS marker m ‘the one with’ which encode a genitive meaning instead of n ‘of’ affects the linear order of the NP and its semantic interpretation as in (53).

(53)

a. arba n tmṭṭoṭ
FS.boy of CS.woman
‘The woman’s boy’

b. tamṭṭoṭ m u-rba
woman the one with CS.boy
‘The woman with a boy’

The fact that NPs are marked for CS in their initial prefix position suggests that CS is also relevant to phonology and not only to syntax. Although it is related to the syntactic information and relation between NP's elements, the form of the elements changes under certain environments. Furthermore, the fact that CS11 is marked sometimes with w-, j-, or u suggests that it is not only a syntactic operation but has to do also with the phonological structure of the stem. The CS allomorphy and the marking on the functional head necessitate an approach that relates the syntactic output to phonological component. One that would account for phonological ramifications of this syntactic phenomenon.

4 CURRENT PROPOSAL

Nouns have no specific grammatical property until they are combined with a functional head. The Construct State is marked on this head but not on the lexical category. The CS allomorphy and this marking necessitates an approach that relates phonology to syntax in dealing with this phenomenon. To articulate this, I will take a complementary approach between Lahrouchi's (2013) templatic approach and El hankari's (2014) syntactic analysis. The proposal argues against El hankari's claim that the coordinator conjunct d- 'and' is a preposition that CS its complement NP. It also accounts for bu- 'the one with.MS' and mu 'the one with. Fem' as CS markers. It argues also that Lahrouchi's account fails to account for cases in which nouns starting with single consonants are marked for CS through vocalization of the glide into u- or i-. Amazigh presents cases in which the feminine t- co-occur with u- and i- in CS forms.

4.1 Flaws in previous analysis

A counter argument comes from Ait Atta Amazigh variety where the morpheme d 'and' is used to join NPs and VPs as demonstrated in (54).

(54)

a. i-tran d w-ayyur
PL-star and CS-moon
'The stars and the moon'

b. i-swa aman d itʃa aɣrum
3SG.Masc-drink.PERF water and 3SG.Masc-eat.PERF bread
'He drank water and ate bread'

Amazigh has other conjuncts such as nɣd 'or'and maʃa 'but'. These coordinating conjunctions behave like d 'and'; they can select a NP or a VP. However, they do not mark their selected NP for CS.

Moreover, the morphosyntactic complexity of bu+noun present a challenging linguistic behaviour for El hankari's analysis. In this regards, bu 'the one with.Masc' and mu 'the one with.Fem' cannot be considered as prepositions for many reasons. First, buNouns contain inflectional morphology inside them as in (55), which make bu a derivational affix. This goes along with Bensoukas (2015) claim.

(55)

	M.SG	F.SG	M.PL	F.PL
M.	Buwfus	Butfust	bi12jfassn	Butfassin

[11] '' when the noun in CS starts with a consonant cluster, the CS marker w- or j- is followed by an epenthetic schwa…when the noun starts with a single consonant, CS is marked on the noun through vocalization of the glide into u- or an i-" Mettouchi and Frjzyngier (2012).

[12] In Tachlhiyt Berber vowel assimilation in bu/mu alternates with bi/mi when the following noun starts with [i], being it singular or plural.

F.	Mmuwfus	Mmutfust	Mmijfassn	Mmutfassin

Bensoukas (2015:03)

Bunouns are lexicalized in Amazigh and are inherently marked for number, gender, and obligatory for CS.

According to Bensoukas (2015) bu cannot be considered as in inflectional affix because it contradicts with Greenberg's Universal 28: 'if both the derivation and inflection follow the root, or they both precede the root, the derivation is always between the root and the inflection'.

(56)

a. Universal 28:
   Inflection+ derivation+ Root + derivation+ inflection
b. BuNs: buwfus bu(=derivation) + u (=CS inflection) + fus (= Root)

Bensoukas (2015:04)

Bensoukas argue that bu is a phrasal affix that attaches to 'words that are fully inflected'. The affixation of bu 'the one with' CS marks the 'inner' noun. He argues that in this morphological operation syntax has access to the internal structure of the word13. The proposed argument is that CS is sensitive to syntax since it is contextual.

Another argument that questions El hankari's analysis is the concept of modification. If we consider bu/mu prepositions that CS mark their selected noun, we cannot explain which element CS mark the noun since bu can take a noun that is pre-modified by a numeral as in (57).

(57)

a. bu sin u-dm-awən
   the one with two CS-face-PL
   (Lit. the one with two faces)
   'A hypocrite person'

b. bu yat t-fus-t
   the one with one.Fem Fem.CS-Fem
   'One handed person'

In (57), it is the numeral which is a plausible CS marker than bu. The gender and number agreement between the numeral and the CS marked noun is a solid evidence.

A further argument against El hankari's generalization repeated in (58) is when the first NP containing bu is post-modified by a PP as in (58).

(58)

"X CS-marks its NP under closest c-command iff X is a head, where the head is T or P".

(59)

a. bu+ liqqamt [n u-ḍuwar]
   the one with CS.mint of CS-village
   'The mint seller who is from the village'
b. bu+ [liqqamt n u-ḍuwar]

[13] According to Bensoukas (2015), buNs pose a challenge to No Phrase Constraint hypothesis. In this regards he explains that ' the main assumption behind the constraint is that in forming words, the bases are other words, roots, or stems, but definitely not phrases' Bensoukas (2015).

the one with CS.mint of CS-village
'The seller of the mint grown in the village'

It is then clear from the data presented above that bu cannot be a preposition but it is a phrasal affix because of it being bound. It expresses the possessor of what the noun refers to.

Coordination and modification show that El hankari's analysis (2014) cannot be generalized to account for all the cases under which CS phenomenon takes place.

4.2 A complementary approach:

In pursuit of my goal, I presented some previous accounts in the existing scholarship on state alternation. Now, I will take a complementary approach between the templatic approach proposed by Lahrouchi (2013) and the syntactic analysis put forward by El hankari (2014). The present approach claims two main hypotheses.

a. **Hypothesis 1:** Construct State marking is not only syntactic but it is also determined by the phonological structure of the noun. Amazigh does not allow the consonant cluster /tw/. The non- annexation in some examples shows that Amazigh has not only consonantal roots but vocalic roots as well.

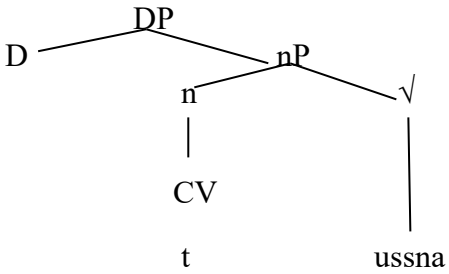
When the noun starts with a single consonant, CS is marked on the noun through vocalization of the glides w- or j- into u- or i. In this regards, u- and i- are instances of CS allomorphy, which co-occur with feminine morpheme t-. Therefore, the feminine morpheme t- and the CS marker w- occupy different positions. The non-co-occurrence of t- and w- is due to the phonological structure of the noun. Accordingly, Amazigh does not allow /tw/ consonant cluster. This can be clearly articulated adopting Lahrouchi's templatic analysis to DP's syntactic structure.

(60)

a.

Free State	Construct State	
tillas	tillas	'darkness'
tarwa	tarwa	'offspring'
tussna	tussna	'knowledge'

b.



The gender morpheme t- is generated under n occupying the CV position, while u is part of the stem. We expect, depending on the description of the CS, that nominal forms tillas, tarwa and tussna (FS), would have the corresponding forms tullas, turwa, tussna in the CS.The constancy of the vowels in (60) shows that Amazigh consists not only of consonantal roots but also of vocalic roots. The initial vowel is part of the stem. The stem cannot have a count reading until it is attached to the functional head.

Hypothesis 2: *A noun cannot be marked for CS in isolation. X CS-marks its NP under closest c-command iff X is a head, where the head is not only T or P, but also a Coordinator, a Numeral or Phrasal affix".*

The first part claims, following El hankari, that the head P CS-marks its selected NP:

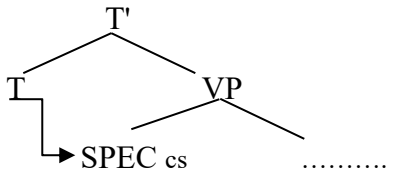
(61) [p' P[NP]]: P'

P ⟶ NPcs

Moreover, the head T CS-marks its selected NP:

(62)

[T' T[VP SPEC-NP]] :



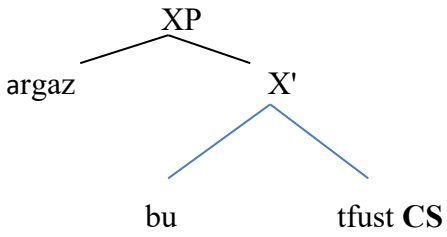
[NP]

El hankari (2014:36)

4.2.1 Bu and mu as heads CS-marking their complement

To complement this analysis, I propose for the reasons stated above, that bu/mu are not prepositions but phrasal affixes that CS mark their selected noun as sketched in (63).

(63)



Bunouns are lexicalized in Amazigh and are marked for number, gender, and obligatory for CS. Bu and mu are attached to words that are already inflected which pose a challenge to No Phrase Constraint hypothesis. Following Bensoukas (2015),'the main assumption behind the constraint is that in forming words, the bases are other words, roots, or stems, but definitely not phrases'. The affixation of bu leads to the marking of its complement for CS. In this operation, syntax has access to the internal morphology of the noun. This fact is a solid argument to consider CS a syntactic phenomenon.

4.2.2 The coordinator *d* as a head

In Amazigh, the morpheme d 'and' is used to join NPs and VPs and therefore cannot be considered as a preposition. The coordinated constituents share the same syntactic category. The coordinator d CS-marks its selected NP. I claim that d 'and' is the head of its own phrase where the first conjunct NP is a specifier and the second conjunct NP is a complement. The coordinator d forms a sub-constituent with the second NP and, therefore, marks it for CS.

I hypothesize, following Scheumann (2020) in his study of Hebrew that the structure with d is hierarchical and forms a complementation relationship. The conjunctive coordinator d CS-marks its selected NP complement.

This relationship requires a strict binding asymmetry. The first conjunct binds the second conjunct as demonstrated in (64).

(64)

a. tarbat ɨ d i-ydi-nss ɨ
girl and CS-dog.Her
'The girl and her dog'

b. *i-ydi-nss ɨ d tarbat ɨ

The coordination conjunction has an external argument (specifier) and internal argument (complement).

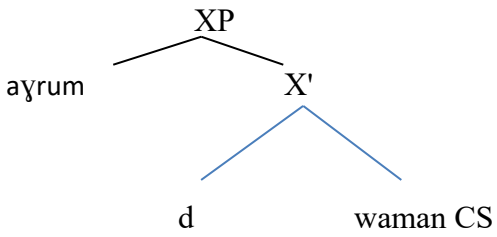
I argue for this complementation relationship because the whole constituent can be extraposed, but not the coordinator d and its complement because they form an intermediate projection as in (65).

(65)

a. [aɣrum d w-aman]
bread and CS-water
'Bread and water'

b. *[d w-aman]

c.



Within this analysis, the movement of the coordinator d and its complement is blocked since they constitute an intermediate projection.

However, there are languages which take initial coordination like French as in (66).

(66)

et Marie et Julien

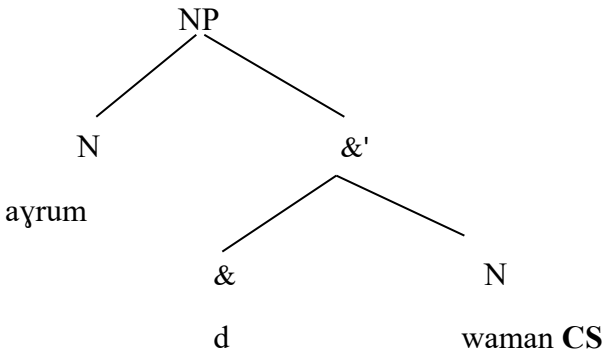
and Marie and Julien

'Marie and Julien'

I take the argument of (2020) that the initial coordinator 'et' is not a true conjunction. It is rather a focus particle.

In the line of these data, the coordinator d requires its complement to be of a specific category. Therefore, it is a head element that c-commands and exhibit c-selection on its complement. This proposal is sketched as follows:

(67)



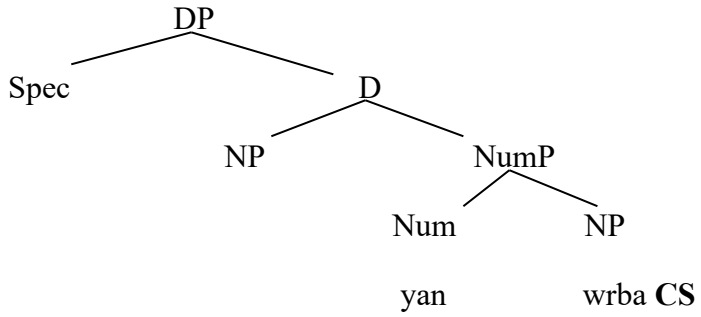
4.2.3 Numerals as heads CS-marking their complement

In Amazigh, numerals project their own functional projection as NumP. They are functional heads that CS-mark their NPs as in (68). The head combines with the nominal expression and hence marks it for CS. In Amazigh, the numerals yan 'one.MS' and yat 'one. Fem' denote indefiniteness.

(68)

a. yan w-rba
one CS-boy
'A boy'

b.



5. CONCLUSION

The paper addressed the question of state alternation in Amazigh. It provided a detailed description of the morphological and phonological changes that target CS nouns. Then, it discussed the environmental conditions under which CS and FS occur. The chapter argued that these changes go beyond the morphological and phonological system of the language. Later, the chapter outlined the main previous studies about the phenomenon. It presented an alternative complementary approach that takes a reconciliation path between Lahrouchi's templatic analysis (2013) and El hankari's syntactic model (2014) to account for state alternation. I argued against Achab's analysis (2000) of the initial vowel as a determiner since [+ definite] f in Amazigh is not an inherent feature of DP and it is contextual. Moreover, a further argument against DP analysis is that in some languages demonstratives, quantifiers, possessives do not occur with (in) definite articles unlike Amazigh. I postulated that CS is a language specific phenomenon that is not only the result of phonological operations, but also of certain syntactic operations. I argued against El hankari's analysis of d 'and' as a preposition, that CS marks its complement. The same goes for bu and mu 'the one with'. I postulated that buNouns contain an inflectional morphology inside them, which make bu a derivational affix. A phrasal affix which attaches to words that are already inflected (see also Bensoukas 2015). The affixation of bu CS marks its selected noun. I hypothesized that CS marking is not only syntactic but phonological as well. Amazigh does not allow the consonant cluster /tw/. In this line of analysis, the initial vowel does not change when it is part of the stem. I argued that a noun cannot be marked for CS in isolation. It is marked by the functional head that c-commands the NP. The head is not only T or P, but it can be also a coordinator; a numeral or a phrasal affix.

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