

Segment sequences in diatopic variation of Kabyle Berber¹

Outline:

- a. In the case of Kabyle nouns, parametric variation does not concern melody but it due to the association of invariable melody to different singular templates.
- b. Borer-Chomsky conjecture as known in the minimalist program may be a valid research strategy in phonology as well.
- c. The locus of variation:
 1. The selection of particular template by a particular melody.
 2. The instruction given by a particular piece of melody regarding association.

1. Theoretical background

1.1 Kabyle plural

1 three types of plural

- a. “external” plural, called “-n plural”, is characterized by the suffixation of –N to the singular

iθβir → iθβir-n “pigeon”

- b. “internal” or “A plural” is characterized by a modification of the quality of the stem vowels, as well as by the appearance of an A in the last vocalic position

aγanim → iγunam “reed”

¹ Kabyle Berber is spoken in Northern Algeria

- c. a third type of plural, so-called mixed because it shows both a suffix and the appearance of an *A* in the last vocalic position.

iβki → iβkan

- d. note that the alternation of the initial vowel sg → pl occurs in 97% of nouns (Basset 1945). It is probably a prefixed (unproductive?) article (which however cannot be dissociated from the root).

1.2 Vowel system

On the surface, the vocalic system of Kabyle is made of three peripheral vowels and a schwa.

i	u
ə	
a	

1.3 Schwa in Kabyle

The occurrence of schwa is predictable² in Kabyle. As described by Chaker (1983), Kossmann (1995) schwa occurs in the following environments

- a. between two word-final consonants C__C# e.g. izəm , aɖfəl
- b. between C1 and C2 of a C1C2C3V cluster C1__C2C3V e.g. iðəflan
- c. between a consonant and geminate C__CxCx: e.g. aɖəbbuz

==> the sequences |əCV| and |Cə#| are illegal in Kabyle.

² Schwa is not predictable in all Berber languages.

1.4 Templates

Templates are a fixed sequence of CV positions that is associated to a morpho-semantic value. The melodic material of the lexical items must comply with this skeleton when it instantiates the morpho-semantic value at hand (McCarthy 1979, Lowenstamm 2003).

Table (2) shows the template of broken plural in Arabic:

(2)

	Root	Singular	Plural: CaCaaCiC	Gloss
a.	fndʒn	fndʒaan	fanaadʒin	cup
	srwl	sirwaal	saraawil	pants
b.	ʔmr	ʔamr	ʔawaamir	order
	ħr	ħar	ʔaħaarir	warm
c.	sfrʒl	safarʒal	safaariʒ	quince
	ʕnkbʔ	ʕankabuut	ʕanaakib	spider

The broken plural is constructed on a quadrilateral root as under 2.a). But, to satisfy the template, when the root is smaller 2.b) melodic items are inserted (w in ʔawaamir) or propagated (r in ʔaħaarir). And, when the root is bigger as under 2.c), melodic elements must drop.

2. Plural formation in Kabyle

In Kabyle Berber³ there is only one plural template that accounts for all singulars. The table below illustrates the case.

³ The examples given here are from my own dialect (Michelet dialect).

3)	class number	Singular template	Singular	Plural	Gloss
	1	VCC	ifər	afriw-n	wing
			izəm	izmaw-n	lion
	2	VCCC	urgəl	urgal-n	precocious fig
			ifrəw	aʃriw-n	peelings
	3	VCVC	afus	ifass-n	hand
			azag	izagg-n	staple
	4	VCVCVC	asalas	isulas	beam
			amaðay	imuðay	brambles
	5	VCVCC	aβuɖəʃ	iβuɖaʃ	boil
			iziçər	izuçar	braided rope
	6	VCCiCiVC	açərruʃ	iç ^w ərʃa-n	oak
			azəmmur	izəmra-n	olive
	7	VCCCVC	aməsluβ	iməslaβ	mad
			aβəhnuq	iβəhnaq	rag
	8	VCCVC	argaz	irgaz-n	man
			axxam	ixxam-n	home
	9	VCCV	alma	almaθ-n	green field
			iθni	iθnij-n	double
	10	VCVCV	açufi	içufa-n	jar

			ifiwi	ifiwa-n	top of the dress
11	VCVCCV		abalṭu	ibulṭa	Vest
			afalku	ifulka	bird of prey
12	VCCiCiV		amərzu	imərza	broken
			irəbbi	irəbba-n	bossom
13	VCCCC		asəjrəs	isjərs-n	nosebag
			inəsləm	insəlm-n	Muslim

Singular forms are distributed over 22 distinct templates⁴, which all neutralize to one single plural template. I propose in Ben Si Saïd (2010, 2011) that plural template is uniform and it is made of 7 [CV] units.

(4)

sg.	representation	plural: 7CV-template
VCC	CV CV CV CV \ / I f r	CV CV CV CV CV CV CV \ / \ / A f r I U n afriwn
VCCC	CV CV CV CV CV \ / U r g l	CV CV CV CV CV CV CV \ / \ / U r g A l n urgaln
VCCVC	CV CV CV CV CV CV \ / \ / A r g A z	CV CV CV CV CV CV CV \ / \ / I r g A z n irgazn

⁴ Only full vowels are considered: VCCC = urgl [urgəl]. Schwa is predictable (cf. 1.3).

1. as they cannot be predicted, all material that appears in plural forms are considered as a lexical ingredient of the root.
2. adopting the hypothesis that peripheral vowels are underlyingly long (see below).
3. all plurals are made of 7 CV units.

3. Diatopic variation of Kabyle Berber

3.1 Data

Plural formation appears to work in the same way in many, or all varieties of Berber, i.e Diatopic variation concerns only the singular forms.

(5)	singular						plural all varieties	gloss
	Maatka	Grande Kabylie Michelet Azazga		Yatafen	Petite Kabylie Aqbu Tazmalt			
1.	içen	içen	-	içniw	-	-	açniw-n	twin
2.	anay	iney	-	-	inyi	-	inyij-n	velum
3.	iweṭṭ	iweṭṭ	iweṭ	-	-	iweṭeṭ	iweṭṭ-n	nit
4.	urgil	urgəl	-	urgal	urgay	-	urgal-n	early figs
5.	iβiw	iβiw	iβiw	iβiw	iβi	iβi	iβaw-n	bean
6.	-	aʃaʃiw	aʃaʃi	aʃaʃiw	aʃaʃi	-	iʃaʃiw-n	large fez
7.	-	aɣaɣəf	aɣɣəf	aɣaɣəf	aɣaɣəf	-	iɣuɣaf	grindstone
8.	-	ihəʃfir	ihʃir	ihəʃfir	ihʃcir	-	ihəʃfir-n	anger
9.	aʒəɾrið	aʒəɾrið	aʒrið	aʒəɾrið	-	-	iʒəɾrið-n	line
10.	-	afəssas	afsas	afəssas	afəssas	afəssas	ifəssas-n	hand
11.	ajarθil	ajərθil	ajərθil	ajarθil	ajərθil	ajarθil	ijrəθyal	large mat

12.	ajursal	aj ^w ərsal	-	aj ^w ərsal	-	-	ijursal-n	mushroom
13.	iziwəf	iziwʃi	iziwəf	iziwʃi	iziwəf	iziwəf	iziwəʃiw-n	sparrow
14.	ajəfk	ajəfki	ajəfki	ajəfk	ajəfki	ajəfki	ijəfkiθ-n	milk
15.	-	iffəw	iffəw	iffəw	iff	iffi	affiw-n	corn

The examples under (5) show that for each plural form correspond different singular all over the dialects.

The variation regarding singular forms does not concern melody or the segmental identity of the root: for any given root, all dialects share the same lexical entry.

3.2 Borer-Chomsky Conjecture (BCC)

The Borer-Chomsky Conjecture which is standardly known in syntax and formulated from Baker 2008 as follows:

“All parameters of variation are attributable to differences in features of particular items [...] in the lexicon”. (Biberauer 2008, Baker 2008, Richards 2008, among others).

Variation is reduced to variation in the lexicon, i.e. which means that parametric variation is exclusively due to distinctions in the lexicon.

The presentation below will show that variation is due to the association of invariable lexical entries to invariable singular templates.

The analysis of the invariability of the plural template over singulars in a given dialect, and across dialects, can only be arrived at when adopting a number of premises that are developed in Government Phonology in general, and in CVCV in particular including the hypothesis that peripheral vowels (i,a,u) are underlyingly long.

3.2.1 Syllable structure

In *CVCV model* the syllabic structure consists of a sequence of light open syllables: a non-branching onset (C) is followed by a non-branching nucleus (V) (Lowenstamm 1996).

In this framework, a final consonant, a closed syllable, a branching onset, a geminate and a long vowel are represented as under (6) below (Lowenstamm 1996, Scheer 2004):

(6)

Final consonant	Closed syllable	Branching onset	Geminate	Long vowel
C V	C V C V	C V C V	C V C V	C V C V
		\ /	\ /	\ /
r #	b a r	b r a	b	a

3.2.2 Vowel length

Following the hypothesis proposed by Lowenstamm (1991) for the vocalic systems of Maghrebi Arabic and Semitic languages of Ethiopia, and then applied on Kabyle by Bendjaballah (1999, 2005) and Italian dialect by Bucci (2009); I adopt that peripheral vowels are underlyingly long in Kabyle,

(7)

a)	C V C V	C V C V	C V C V	b)	CV
	\ /	\ /	\ /		
	A	I	U		A/I/U/
	[a]	[i]	[u]		ə/ø

In this language, the opposition between VV/V is underlying and it's realized on the surface as V/ə opposition. The reduction is a result of phonetic interpretation and the melody and its association are not affected.

There are also underlying consonants, called virtual geminates (Scheer 2000, Ségéral & Scheer (1999, 2001)).

3.2.3 Types of lexical entries

lexical ingredients:

a. Root (melody: linear sequence of melodic items). Ex. IʃIU

b. Template:

- singular: N° 1,2,3,4,.....22.

- plural: [CV CV CV CV CV CV CV]

→ The variation is due to the selection of a particular singular template by a particular root.

3.2.4 Diatopic variation

(8)		singular template				
		1	2	3	8	9
	IʃIU	VCC	VCCC	VCVC	VCCVC	VCCV
1.	Michelet		x			
2.	Azazga		x			
3.	Yatafen		x			
4.	Aqbu					x
5.	Tazmalt	x				

We can observe under table (8), the root IʃIU selects template number 2 in Michelet, Azazga and Yatafen dialect but it selects template number 9 in Aqbu dialect and template number 1 in Tazmalt Dialect.

4. Analysis

- 1st focus of variation: singular templates

The phonologic computation is the association: always from left to right and it's invariable.

(9) One plural: açniwən

a) Yatafen

7-CV template

IçniIU → C V C V C V C V C V C V →[içniw] “twin”
 \ / | | \ / |
 I ç n I U

b) Michelet

4-CV template

IçniIU → C V C V C V C V →[içən] “twin”
 \ / | | |
 I ç n I U

Under 9.a) the melody is not constrained by the structure. We can observe that all melodic items find a site on the skeleton to be associated to.

Under (9.b), we have the same melody as under (9.a) but the template is smaller (three CV less). /w/ remains silent because it can not be associated to the template and V2 which has access to one V-position remains floating and it is realized as zero.

(10) One plural: iβawən

a) Aqbu

5-CV template

IβiIU → C V C V C V C V C V →[iβiw] “bean”
 \ / | \ / |
 I β I U

b) Azazga

4-CV template

IβiIU → C V C V C V C V →[iβi] “bean”
 \ / | \ /
 I β I U

Under 10.a) the segmental material is mapped to 5CV-template which allows all the melodic items to be pronounced. But under 10.b) there are restrictions on the template leaving /w/ without position in the structure and remains floating.

- 2nd focus of variation: association under control

The association of pieces of melody and syllabic constituents is not necessarily automatic. It may be governed by:

a. grammatical control

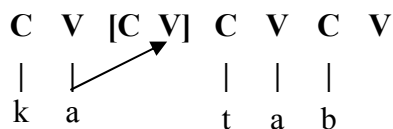
Arabic

form II form III
kattab kaatab

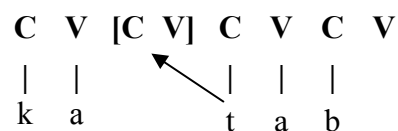
→ McCarthy (1979): there are two different templates C₁V₁C₂C₂V₂C₃ vs. C₁V₁V₁C₂V₂C₃

→ Guerssel & Lowenstamm (1990): argue that there is only one template and the difference is due to the association of the melody to the morphological site [CV]. The gemination of the middle consonant (form II) or the spreading of the first vowel (form III) may be a morpheme, i.e. only marker of grammatical category in question. C₂ or V₁ receive an "order" to associate.

Form II



Form III



The association of melodic objects may be under control (Ben Si Said 2010, Guerssel & Lowenstamm 1990).

b. association under lexical control

There is another possibility of control. The association may be governed by the lexicon: melodic items are lexically specified for associating or not (Ben Si Saïd Samir, Markéta Ziková & Tobias Scheer 2009, Ziková, Markéta & Tobias Scheer 2009).

(11)

	locus1: sg. template		locus2: order to associate	
	3 CV	5 CV	I ₂	U
Tazmalt	x			
Michelet		x		x
Aqbu		x	x	

Table (11) shows three different realizations. The melody is restricted by the size of 3CV-template in Tazmalt dialect. But it has the same template in Michelet and Aqbu dialects; the difference lies in the order given by the lexicon to the association of the melody to a given template: I₂ and U are under lexical control. As represented under (12) below:

(12) One plural: affiwən

a) Michelet

5-CV template

IʃIU → C V C V C V C V C V → [iʃʃəw] “corn”

\ / \ / | |

I ʃ I U

b) Aqbu

5-CV template

IʃIU → C V C V C V C V C V → [iʃʃi] “corn”

\ / \ / \ /

I ʃ I U

c) Tazmalt

3-CV template

IʃIU → C V C V C V → [iʃʃ] “corn”

\ / \ / |

I ʃ I U

Conclusion

To summarize, starting with the observation of the interaction between segments, this presentation attempted to show that some lexically present items of roots do not surface in the singular because the template of their singular class does not provide enough space. I have also shown that the variation regarding singular forms does not concern melody or the segmental identity of the root: a given root will select different singular templates in different dialects.

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