Regular and Irregular Imperfective conjugations in Berber languages

In Berber languages, the Imperfective stem is formed by means of: (i) prefixation of the augment /tt-/ to the basic stem, (ii) gemination of a segment in the stem and (iii) insertion of a vowel in the stem. Vowel insertion may operate with /tt-/ prefixation (e.g. **xdm** ⇒ **ttxdam** "work") or with gemination (e.g. **gn** ⇒ **ggan** "sleep") whereas prefixation never combines with gemination, except for a few mono-consonantal verbs (e.g. **g** ⇒ **ttgga** "be"). In this paper, regular and irregular verbs are contrasted within a Template Morphology Model. The aim is to show that both types of verbs involve a set of morphological operations that follow from templatic constraints. Thereafter, focus will be made on irregular verbs. It will be shown that the surface irregularity which they display across Berber languages hides a templatic activity that makes them somewhat "underlyingly" regular.

In the Imperfective stem, irregular verbs differ from regular ones in that they undergo more than one morphological operation. Examples from Tamazight, Tamashek and Tashlhiyt Berber varieties[*] follow under [1]:

[1]	*Aorist*	*Imperfective*
a) Tamazight		
"get cold"	krəm	kərrəm
"pierce"	gbu	gəbbu
"overnight"	nəs	nəssa
"be"	g	təgga / ttəg
"wash"	əg^{w}	təgg^{w}a
b) Tamashek		
"do"	æ̀j	tájj(a)
"hit"	ɔ́wət	təwwát
"say"	æ̀nn	jánn
"kill"	æ̀ŋʕ	náqq
c) Tashlhiyt		
"stand up"	nkr	nkkr
"sleep"	gn	ggan
"be, become"	g	ttgga
"eat"	ʃʃ	ʃtta
"hit"	ut	kkat

Traditionally, Berber linguists who examined this kind of formation were often discouraged by the number and the nature of the operations used to derive the Imperfective forms. Notice that within a Prosodic Morphology Model (McCarthy & Prince 1986 *et seq*.), most of the mono- and bi-consonantal inputs given in [1] violate the Minimality Word Constraint. Different kinds of verbs are distinguished in [1]:

(i) verbs geminating only one stem consonant (e.g. Tamazight: **kərrəm**, **gəbbu**; Tashlhiyt: **nkkr**, **knnu**).

(ii) Verbs using both gemination and vowel insertion (e.g. Tamashek: **náqq**; Tamazight: **nəssa**; Tashlhiyt: **ggan**)

(iii) Verbs using affixation and vowel insertion (e.g. Tamazight: **ttəg**, Tashlhiyt **ʃtta**)

[*] Tamazight, Tamashek and Tashlhiyt are spoken in the Middle Atlas range in Morocco, Mali and Southwest of Morocco, respectively.

(iv) Verbs using affixation, vowel insertion and gemination (e.g. Tamazight: **təgga**, **təgg^{w}a**; Tamashek: **təwwɑ́t**, **tɑ́jj(a)***;* Tashlhiyt: **ttgga**)

Many linguists talk about lexical idiosyncrasy since some verbs change completely (e.g. Tashlhiyt: **ut ⇒ kkat**) while others use unusual infixes (e.g. Tamashek: **æ̀nn ⇒ jɑ́nn**, Tashlhiyt: **ʃʃ ⇒ ʃtta**). My claim will not concern the origin of such affixes. Rather, I will show that the shape -more particularly, the size- of the Imperfective form depends on the Aorist form. That is, *the shorter the Aorist form is, the more numerous the operations used to transform the verb are.* Indeed, a triconsonantal verb merely geminates the medial consonant at the Imperfective stem while bi- and mono-consonantal verbs undergo both gemination and affixation. In any cases, the imperfective form is nothing but an extended aorist form; gemination, affixation and vowel lengthening are different ways that makes it possible for any input to extend its stem. Therefore, I suggest that the imperfective forms in [1], though being morphologically different, are "templatically" similar: they are derived by means of a unique template as given in [2]:

[2] CVCVCVCV

In the case of tri-consonantal verbs, the template in [2] is filled by the three stem consonants and the underlined CV is an empty site where the medial consonant gets geminated. This is illustrated in [3] with the imperfective form **kərrəm**:

[3]

```
CVCVCVCV
|  |  \ |  | |
k  ə  r  ə m
```

On the other hand, Berber peripheral vowels (u, a, ɑ, i) are represented, following Lowenstamm (1991), Bendjaballah (2000) and Idrissi (2000), as being phonologically long: they are connected with two V slots. By contrast, central vowels (ə,æ) are short: they are connected with one V slot. This allows verbs like **gəbbu** and **nəssa** to get their template filled.

The surface irregularity that mono- and bi-consonantal verbs display in the Imperfective stem is due to the fact that they use the same template as tri-consonantal verbs. Therefore, they must use all the operations they can in order to fill a template that contains four CV units. For example, a short verb like **g** undergoes both prefixation, gemination and vowel insertion to get the Imperfective template filled, while a verb like **krəm** merely undergoes gemination. Here below are represented some of the irregular imperfective forms given in [1]:

[4]

```
CVCVCVCV          CVCVCVCV          CVCVCVCV
| |  \/  \  /       \  /  \  /  |     |  \ /   \ /
t ə  g   a  [təgga]     k   a   t  [kkat]     n   ɑ     q  [nɑ́qq]
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The templatic approach as suggested here is not limited to Berber languages. Examples will be given from other Afroasiatic languages such as Classical Arabic (Guerssel & Lowenstamm 1993), Akkadian, Geez and Somali.

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